

BULLETIN OF MISCELLANEOUS INFORMATION No. 8 1937 ROYAL BOTANIC GARDENS, KEW

XLIII—A NOTE ON THE HORNEED POPPY IN NEW ZEALAND. H. H. ALLAN (Plant Research Station, Palmerston North, New Zealand).

The horned poppy, *Glaucium flavum*, was first recorded for New Zealand in 1878 by Kirk ("On the Naturalized Plants of Port Nicholson and the adjacent District," Trans. N.Z. Inst. **10**, 362-378), as "widely diffused on shingly beaches" at Port Nicholson, "supposed to have been introduced in the packing material for the patent slip machinery." Work was commenced on the harbour front towards the end of 1865, but I have not been able to find evidence that the connexion between the patent slip machinery and the introduction of the horned poppy is more than a surmise. The present distribution, as given by Cheeseman (Manual of the New Zealand Flora, ed. 2, p. 1065: 1925) is "Sandy or shingly beaches from Wanganui and Hawkes Bay to Wellington. Near the mouth of the Awatea River, *Cockayne*; vicinity of Ashburton, *H. W. Smith*; Puketeraki (Otago), *G. M. Thomson*." I have been able to study only the population at Port Nicholson.

Turrill ("A Study of Variation in *Glaucium flavum*," Kew Bull. 1933, 174-184) gives a valuable account of the taxonomic history, relationships and variations of the species. For the British Isles he states that *G. flavum* in luxuriance of development is rather readily modified by environmental factors. The variations are discussed, and Kuntze's action in uniting all forms of *Glaucium* known to him under one specific name is rejected. "That petal-colours, types of capsule indumentum, types of indumentum of vegetative parts, size of flowers, and shapes of leaves do show a degree of independent variation is true, though the linkage of characters is rather greater than Kuntze admits. When, however, we find as we do, that certain characteristic combinations are constant, except for a few exceptions usually explicable by alien introduction, for geographical regions or definite (ecological) habitats, we have to review Kuntze's conclusions with the aid of facts he ignored."

The polymorphy in *Glaucium flavum* from different sources is analysed by the aid of a formular treatment, and the conclusion drawn that *G. leiocarpum*, *G. Serpieri*, *G. fulvum*, and *G. tricolor* "represent certain combinations of characters which occur also in other combinations and which show no clearly marked geographical

or ecological isolation." It is further concluded that *G. flavum* in this wide sense "is most polymorphic in the Eastern Mediterranean Region, and especially in the Balkan Peninsula, that it spread westward and in doing so *G. flavum sensu stricto* (*Chelidonium Glaucium* L.) segregated out. . . . Eastwards from the Balkan Peninsula a selection, apparently less complete, has tended to the predominance of shorter, more slender, glabrous fruits and darker flowers."

Glaucium flavum now occurs in abundance along the outer shores of Miramar Peninsula on the gravelly and sandy beaches a little above high-water mark. Occasionally plants occur on more rocky ground or in the lower parts of the grassy vegetation a little above the coastal strip, and along the roadsides. During the past six months (October 1936–March 1937) I have made a detailed study of the populations occurring between Point Dorset and Island Bay, a distance of some 10 km., examining hundreds of plants, and actually scoring 250. The outstanding result is the constancy of *Glaucium flavum* in that area. Of course there are differences in stature according to habitat conditions, but in essentials one plant is exactly like another. Using Turrill's scheme, we get the following expression of the Wellington form:

Stem: glabrous, except that in the younger stages a *very* few hairs are always to be found near the lower cauline leaves, which may or may not persist in the adult stage. S.2.

Cauline leaves: rather densely bristly on the upper surface, and rather deeply lobed. L.1.4.

Flower stalk: glabrous. P.2.

Sepals: rather sparsely bristly, but constantly so. K.1.

Petals: \pm 3.7 cm. long, never less than 3 cm.; pale yellow, with a definite but slight basal blotch, sometimes deepening on drying. C.2.3.5.

Ovaries and young fruits: rough. G.1.

Fruits: more than 20 cm. long, more than 4 mm. broad, not contorted, not constricted between the seeds. F.2.4.6.8. (Of only a few of the plants used for these measurements am I certain that they were the same as used for the other data.)

The formula for each one of the 250 scored, thus reads: S.2. L.1.4. P.2. K.1. C.2.3.5. G.1. F.2.4.6.8. Nor was any plant noted differing from this. This formula agrees largely with one given by Turrill for Hurst Castle, Hants, and that for Caneé, Crete (differing only in the larger flowers, and the presence of a basal blotch). But Turrill does not give any exact measurements, and this slight difference in petal-length may not be very significant. In any case the form comes into *G. flavum* in Turrill's stricter sense. Particular attention was paid to plants of different ages, and it became clear that for this species, at Wellington, there is no polymorphy in the genetic sense, but a constant jordanon, or whatever one likes to call it, is present. Seedlings, too, showed no sign

of any segregation of characters. The constancy of flower colour is in striking contrast with the polymorphy shown in New Zealand by *Eschscholtzia californica* and *Lupinus arboreus*, where one seldom finds a population all of one flower colour. Turrill's promising line of investigation seems very well worth following up, as he suggests, "over a wide range of species and genera."

Dr. Allan's interesting account of *Glaucium flavum* in a New Zealand habitat shows clearly the value of studies of plant populations and the arrangement of the data obtained in such a manner that comparisons can easily be made with other populations. The result of Allan's scorings suggests that there has been only one introduction of *G. flavum* to the Port Nicholson habitat, and that, very probably, from a British locality. Though the possibility of selection of one genotype ("constant jordanon, or whatever one likes to call it") cannot be ignored.

Since the paper on *Glaucium flavum* was published in 1933, some cultural and additional field studies have been made. These have not yet been completed but on the whole they support the scheme proposed in the above paper. It is interesting to note that the New Zealand material has the sepals "rather sparsely bristly, but constantly so." E. Mediterranean material, from the Athos Peninsula, grown in the Herbarium Ground at Kew, has varied very greatly in this character, even for different flowers on the one plant. In the examples given in K.B. 1933, 182-3, the first four should read K 1, not K 2. All British specimens seen have, as stated in the text, more or less bristly sepals.

The symbolic scheme suggested in K.B. 1933, 182, does not include certain variations which a preliminary survey of a large number of specimens appeared to indicate were of very minor importance for the purposes then in view. One advantage of such a scheme, however, is its flexibility. Unlike systems of nomenclature based on type specimens, it can be modified according to both aims and experience, as well as to enable available data to be utilized to the full. Allan's agreement that the scheme is worth following up is encouraging, and it is hoped that his contribution will draw further attention to it. More constructive criticism based on real experience and unbiassed testing is needed.

W. B. TURRILL.

XLIV—TROPICAL AFRICAN PLANTS: XVII*.

Cistanthera parvifolia M. B. Moss, sp. nov. [Tiliaceae]; a *C. Holtzii* Engl. foliis multo minoribus angustioribus, petiolis multo gracilioribus, petiolis pedicellisque pilis minutis stellatis dense praeditis et hirsutis differt. Trees and Shrubs of Kenya Colony 41 (1936).

* Continued from Kew Bull. 1937, 341.

Arbor. *Ramuli* cortice cinereo transverse fissi obtecti, novelli pilis minutis stellatis dense praediti et hirsuti. *Folia* subcoriacea, oblonga vel oblongo-lanceolata, vix acuminata, apice obtusa breviter mucronulata, basi rotundata, 2-4 cm. longa, 1-1.6 cm. lata, margine integra vel obscure undulata, supra glabra costa puberula, subtus minutissime stellato-puberula; costa supra sulcata, subtus prominula; nervi laterales utrinsecus 6-7, inconspicui; petiolus tenuis, 6-10 mm. longus, breviter stellato-pubescentis et hirsutus; stipulae minutae, caducae. *Cymae* breves, 1-2-florae, ex axillis foliorum apicem versus ramulorum ortae; pedunculi 6-8 mm. longi, ut pedicelli breviter stellato-pubescentes et hirsuti; pedicelli pedunculis breviores, infra calycem articulati; bractaeae et bracteolae mox deciduae; alabastra ellipsoidea, circiter 8 mm. longa, breviter stellato-pubescentia. *Sepala* libera, oblongo-lanceolata, 8 mm. longa, 2.5 mm. lata, patentia vel reflexa, extra breviter stellato-pubescentia, intus parce puberula. *Petala* oblonga, circiter 8 mm. longa, 2 mm. lata, glabra. *Stamina* 10, per paria inaequalia petalis plus minusve opposita, filamentis vix 1 mm. longis cohaerentibus; antherae 3-4 mm. longae; staminodia 5, cum paribus staminum alternantia, lineari-lanceolata, 6-7 mm. longa. *Ovarium* plus minusve globosum, circiter 2 mm. diametro, minutissime pubescens; stylus circiter 1 mm. longus; stigma carnosum, lobis 2 mm. longis instructum. *Fructus* ignotus.

KENYA COLONY. In forest, Arabuko, June 1929, *R. M. Graham* (For. Dep. 1994):—fair-sized tree; bark rough, dark coloured; flowers white, scented; fruits small black; native names *Mrunza* (Kiswahili), *Papan* (Kisanya), *Muheru* (Kiswahili-Lamu).

Specimens of *C. parvifolia* M. B. Moss were sent to the Botanical Garden and Museum at Berlin for comparison with the type specimen of *C. Holtzii* Engl., the only representative of the genus hitherto known from East Africa. We are very grateful to Prof. M. Burret, who compared the two species and who reported that he considered *C. parvifolia* distinct from *C. Holtzii*. The differential diagnosis here given is based on Prof. Burret's report. An interesting feature of *C. parvifolia* is that the stamens are joined together by their filaments in unequal pairs. This character is not shown in the drawing of *C. Holtzii* in Engler, *Botanische Jahrbücher* **39**, 578 (1907), nor is it mentioned in the generic description on the previous page.

E. MILNE-REDHEAD.

Erythroxylum Fischeri Engl. *Pflanzenw. Ost-Afr.* **C**, 226 (1895) [*Erythroxylaceae*]; O. E. Schulz in Engl. *Pflanzenr.* *Erythroxylaceae* **4**, 134, 154 (1907). *Amanoa Schweinfurthii* Bak. & Hutch. in Bull. Misc. Inform. Kew **1910**, 56 (1910), *synon. nov.*; Hutch. in Dyer Fl. Trop. Afr. **6**, 630 (1912); Pax in Engl. *Pflanzenr.* *Euphorbiaceae* **4**, 147, XV, 200 (1922); Pax & Hoffm. in Engl. *Pflanzenfam.*, ed. 2, 19c, 70 (1931).

The type number of *Amanoa Schweinfurthii* Bak. & Hutch. is cited by Schulz (l.c.) under *Erythroxylum Fischeri* Engl. and the type specimen undoubtedly belongs to that genus. E. A. BRUCE.

Euphorbia erantes R. A. Dyer et Milne-Redhead, sp. nov. [Euphorbiaceae] ; ab *E. Ledermanniana* Pax & K. Hoffm. foliis brevissimis deltoideis (haud lineari-lanceolatis), ovario breviter stipitato incluso differt.

Herba perennis, glabra, radice tuberoso. *Tuber* plus minusve sphericum, 3-4 cm. diametro, radicibus paucis tenuis instructum. *Caudex* perennis, lignosus, subterraneus, simplex, erectus, circiter 2.5 cm. longus, usque 1 cm. diametro. *Caules* annui, carnosii, glauci, 1-2 ex apice caudicis exorti, circiter 8 cm. alti, sub anthesin simplices, demum verosimiliter ramos foliosos gerentes. *Folia* caulium floriferorum alterna sessilia, amplexicaulia, deltoide, acuta, circiter 10 mm. longa, 5 mm. lata, leviter carnosae, glaucae, mox deciduae ; folia inflorescentiae deltoideo-ovata, acuta, circiter 8 mm. longa et lata, leviter carnosae, glaucae. *Cymae* umbelliformes, ramis 2-3 usque 2.5 cm. longis, quoque ramulo cyathia singula vel bina gerente, cyathio basali interdum haud evoluto. *Cyathia* omnia ♂, cupuliformia vel campanulata, circiter 6-7 mm. diametro, glandulis 5 et lobis 5 fimbriatis instructa. *Glandulae* disjunctae, transverse oblongae, breviter lateque stipitatae, circiter 3 mm. latae, margine crenulatae. *Ovarium* subglobosum, breviter stipitatum ; styli 3, in toto 2 mm. longi, apice plus minusve bifidi, basin versus in columnam 0.5 mm. longam connati. *Capsula* erecta, trilobata, circiter 1 cm. diametro, 1 cm. alta ; semina late ovoidea, leviter 3-angularia, circiter 4 mm. alta, et 4 mm. diametro, brunnea, irregulariter elevato-alveolata.

NORTHERN RHODESIA. Solwezi District. On dry burnt ground in dambo at Solwezi, 20 Sept. 1930, *Milne-Redhead* 1158 :—perennial with tuberos rootstock ; stems rather succulent, glaucous, about 8 cm. high ; bracts sub-similar to the reduced leaves, glaucous, pinkish ; foliage shoots not developed when in flower and fruit.

Phyllanthus Grahamii Hutch. et M. B. Moss, sp. nov. [Euphorbiaceae] ; affinis *P. Welwitschiano* Muell. Arg., sed foliis basi cuneatis haud cordatis, pedicellis brevibus, stigmatibus patentibus differt. Trees and Shrubs of Kenya Colony 49 (1936).

Frutex parvus, ramosus, usque 3 m. altus (? dioecus) ; rami purpureo-brunnei, cortice demum angustato-longitudinaliter denu-
dati ; ramuli hinc inde papilloso-puberuli, ceterum glabrescentes. *Folia* stipulata ; stipulae plus minusve persistentes, subulato-triangulares, 4 mm. longae, basi 1 mm. latae, apice filiformes, plerumque brunneo-ciliatae ; petiolus 1-1.5 mm. longus, supra tenuiter sulcatus, papilloso-puberulus ; lamina oblongo-elliptica vel anguste obovata, glabra, apice rotundata, basi late cuneata, 2-5 cm. longa, 1-2 cm. lata, subtus pallidior, margine revoluta ;

nervi laterales utrinsecus circiter 11, prominuli, patentes, reticulati. *Bractae* multae, rufae, in axillis foliorum cum floribus immaturis congestae, quadratae vel lanceolatae, marginibus filiformi-laciniatae. *Flores* ♂ plerumque solitarii, ex axillis foliorum orti; pedicelli 3.5 mm. longi, glabri; tepala 3+3, late elliptica, apice rotundata vel truncata, circiter 3 mm. longa, glabra; disci glandulae 6, contiguae, hippocrepidiformes, crassae, 0.7 mm. longae; stamina 3, filamentis connatis 2 mm. longis. *Flores* ♀ 1-2 ex axillis foliorum orti; pedicelli 2-4 mm. longi, glabri; tepala 3 + 3, late elliptica vel suborbiculata, apice rotundata vel subtruncata, 3 mm. longa, glabra, valde venosa; discus crassus, undulato-annularis; ovarium sessile, glabrum, 3-lobatum, subglobosum, stylis connatis 0.7 mm. longis; stigmata 3, patentia, crassa, ambitu triangularia, apice leviter vel valde furcata, circiter 1 mm. longa.

KENYA COLONY. Arabuko, in forest undergrowth, 1927, R. M. Graham (For. Dep. 1986) (type):—small shrub 3 m. high; flowers whitish; native name *Mkwamba-vitu*. Common shrub in Arabuko, Sokoke forest and in bush on old cultivated land, Aug. 1932, MacNaughtan 184 (For. Dep. 2869):—flowers white and faintly scented.

TANGANYIKA TERRITORY. Tukuyu [Rungwe] District. Kilambo, Masoko, 1 Aug. 1912, Stolz 1404:—shrub 1.5 m. high, fruits greyish-red.

ZANZIBAR. Babay, July 1894, Sacleux 2100.

Phyllanthus holostylus Milne-Redhead, sp. nov. [Euphorbiaceae]; a *P. suffrutescenti* Pax foliis subacutis, stylis omnino liberis apice integris differt, et a *P. Friesii* Hutch. foliis latioribus, stylis haud connatis recedit.

Herba perennis, rhizomate lignoso interdum repente. *Caules* multi, erecti, aliquanto congesti, 8-10 cm. longi, leviter furcati, paulo complanati, glabri, plus minusve purpureo-glaucescentes. *Folia* ovato-lanceolata vel lanceolata, apice subacuta, minute apiculata, basi rotundata, subsessilia, usque 12 mm. longa, 4 mm. lata, integra, coriacea, nervis valde inconspicuis, glabra, glauco-viridia; stipulae parvae, triangulares, vix subulatae, scariosae. *Flores* ♂ solitarii vel 2-3 in axillis foliorum fasciculati:—*Pedicelli* circiter 2 mm. longi, tenuissimi, glabri. *Sepala* 6, elliptico-oblonga, obtusa, circiter 3 mm. longa, 1 mm. lata. *Glandulae* disci 6, contiguae, glabrae. *Stamina* 3; filamenta usque ad apicem connata, 1.5 mm. longa; antherae circiter 1 mm. longae. *Flores* ♀ in axillis foliorum solitarii:—*Pedicelli* sub anthesin circiter 3 mm. longi, apicem versus leviter incrassati, demum 5 mm. longi, glabri. *Sepala* 6, ovata, obtusa, circiter 3 mm. longa, 2 mm. lata. *Discus* hypogynus, patelliformis, margine crenulatus, glaber. *Ovarium* obscure trilobatum, carnosum, glabrum; styli 3, liberi, circiter 1 mm. longi, apice integri aliquanto reflexi et ampliati. *Capsula* vix matura depresso-globosa, 4.5 mm. diametro, 2.5 mm. alta, stylis persistentibus.

BELGIAN CONGO. Katanga. Elisabethville, Sept. 1911, *Hock* s.n. (Herb. Brux.):—♀ plant only.

NORTHERN RHODESIA. Solwezi District. On dry burnt ground in dambo at Solwezi, 21 Sept. 1930, *Milne-Redhead* 1164 (type):—perennial with woody, sometimes running, rootstock; shoots up to 10 cm. high; ♂ and ♀ plants.

***Dialium orientale* Bak. f.** in Journ. Bot. **67**, 195 (1929) [*Caesalpiniaceae*]. *Dialium reticulatum* Burt Davy et MacGregor in Kew Bull. 1932, 261 (1932), syn. nov.

Leaves sub-opposite or alternate, rarely opposite, in 1–3, sometimes 4, pairs.

***Isoberlinia densiflora* (Bak.) Milne-Redhead**, comb. nov. [*Caesalpiniaceae*]. *Berlinia densiflora* Bak. in Bull. Misc. Inform. Kew, 1897, 265 (1897); Harms in Engl. Pflanzenw. Afr. **3**, 1, 469 (1915); Bak. f. Leg. Trop. Afr. 687 (1930). *Berlinia Stolzii* Harms in Engl. Bot. Jahrb. **53**, 465 (1915), et in Engl. Pflanzenw. Afr. **3**, 1, 469 (1915); Bak. f. Leg. Trop. Afr. 687 (1930).

Comparison of the type specimen of *Berlinia densiflora* Bak. with a duplicate of the type of *B. Stolzii* Harms convinces me that these two species are conspecific. The tree is common in north-eastern Northern Rhodesia, north Nyasaland and south-western Tanganyika. Excellent material of it has recently been received from Mr. B. D. Burt.

***Isoberlinia magnistipulata* (Harms) Milne-Redhead**, comb. nov. [*Caesalpiniaceae*]. *Berlinia magnistipulata* Harms in Notizbl. Bot. Gart. Berl. **8**, 148 (1922); Bak. f. Leg. Trop. Afr. 691 (1930); Trees and Shrubs of Kenya Colony 63 (1936).

KENYA COLONY. The Mau, G. S. Baker (For. Dep. 308). Makadara, 330 m., *Graham* (For. Dep. 2051):—bark contains good fibre; Kiswahili name *Mkwe*; Digo name *Mukua*. Common on the Coast, *MacNaughtan* 69 (For. Dep. 2618):—small tree; flowers white, sweet scented; Kiswahili names *Mkua*, *Mkwe*. Without locality, Oct. 1932, *MacNaughtan* 205 (For. Dep. 3021):—shrub; bark has useful fibre and wood produces good charcoal; flowers white, sweet-scented, plentiful; Kiswahili name *Mkwe*. Port Tudor near Mombasa, Sulemani (For. Dep. 3236):—shrub up to 9 m. high; Kiswahili name *Mkwe*.

TANGANYIKA TERRITORY. Doda, June 1893, *Holst* 2958. In the shade of *Trachylobium* and *Brachystegia* on top of a small cliff. Tanga, 6 km. N. of Amboni on the Mombasa road, 30 m., Dec. 1935, *Burt* 5351:—spreading tree, 4.5 m. high.

The material here cited is all in the Herbarium of the Royal Botanic Gardens, Kew. The record from the Mau is of interest, as the species is found chiefly in the coastal region of southern Kenya and northern Tanganyika.

Isoberlinia Scheffleri (Harms) Greenway, comb. nov. [Caesalpinaceae]. *Berlinia Scheffleri* Harms in Engl. Bot. Jahrb. **30**, 83 (1901).

TANGANYIKA TERRITORY. Usambara District. Derema, *Scheffler* 201 (type). E. Usambaras. Locally common in evergreen rain forest, *Greenway* 1064:—a tree up to 31 m. high with a much branched bushy spreading crown from 25 m.; white flowers and large flat woody pods, which look like shoe-soles when lying on the ground; native names *Mamba*, *Mtambala*, *Msembe sembe* (Kishamb.), *Mbarika* (Kiswahili). *Zimmerman* 1581.

Acacia Eggelingii Bak. f. in Journ. Bot. **73**, 263 (1935) [Mimosaceae].

ABYSSINIA. Addis Ababa, *Mrs. Armbruster* s.n. (K.).

UGANDA. West Nile District. Seen at Paidia, 1500 m., Okollo, 1200 m., Nebbi, 1350 m., Febr. 1934, *Eggeling* 1528 (For. Dep. 1453) (K.):—tree to 7.5 m., sometimes rather flat-topped; flowers precocious; buds red; stamens white. Logiri, *Eggeling* 1871 (B.M.):—fruiting specimen. Zeio, March 1935, *Eggeling* 1905 (type) (B.M.):—tree attaining 15 m., usually about 6 m.; crown irregular, sometimes flat-topped; flowers more or less precocious, in great profusion; flower-buds red; calyx red; stamens white. Bugishu District. Kaburon, Mt. Elgon, 2040 m., Jan. 1936, *Eggeling* 2490, 2497 (K.):—flowering material.

KENYA COLONY. North Kavirondo District. Singly or gregariously on steep slopes, mixed with *Ficus mallatocarpa*, North Kitosh Reserve, south of Mt. Elgon, 1500–1950 m., Jan. 1931, *Honoré* (For. Dep. 2590) (K.):—thorn tree 12 m. high; flowers appearing before the leaves, cream coloured; legumes light red-brown. Without locality, *Hutchins* (For. Dep. 596) (K.).

As will be seen from the localities of the specimens cited above the distribution of *Acacia Eggelingii* Bak. f. is now known to be wider than it at first appeared to be.

E. MILNE-REDHEAD.

Acacia hebeclada DC. Cat. Pl. Hort. Bot. Monsp. **73** (1813) [Mimosaceae]; DC. Prodr. **2**, 461 (1825); Benth. in Hook. Lond. Journ. Bot. **1**, 499 (1842), **5**, 95 (1846); Harv. in Harv. & Sond. Fl. Cap. **2**, 280 (1861–62); Oliv. in Oliv. Fl. Trop. Afr. **2**, 348 (1871); Benth. in Trans. Linn. Soc. **30**, 504 (1875). *A. stolonifera* Burch. Trav. **2**, 241 (1824); Burt Davy in Bull. Misc. Inform. Kew **1922**, 331 (1922); Bak. f. Leg. Trop. Afr. **836** (1930); Burt Davy Man. Fl. Pl. & Ferns Transv. **340** (1932).

The description of *A. hebeclada* DC. was published twelve years before it reappeared in De Candolle's Prodr. This earlier reference was overlooked by Harvey in the Flora Capensis, whilst Oliver omitted to give any reference in the Flora of Tropical Africa. This unfortunately has resulted in the incorrect adoption of the name *A. stolonifera* Burch. for the species, for Burchell's description is one year earlier than De Candolle's Prodr.

E. MILNE-REDHEAD.

Acacia nigrescens Oliv. in Oliv. Fl. Trop. Afr. **2**, 340 (1871) [Mimosaceae]; Benth. in Trans. Linn. Soc. **30**, 517 (1875); Bak. f. Leg. Trop. Afr. 829 (1930). *A. nigrescens* Oliv. var. *pallens* Benth. in Trans. Linn. Soc. **30**, 517 (1875). *A. pallens* (Benth.) Rolfe in Bull. Misc. Inform. Kew 1907, 361 (1907); Bak. f. Leg. Trop. Afr. 829 (1930); Burt Davy Man. Fl. Pl. & Ferns Transv. 339 (1932). *Albizzia Lugardii* N.E.Br. in Bull. Misc. Inform. Kew 1909, 109 (1909).

Examination of the abundant material now available convinces me that *A. pallens* (Benth.) Rolfe is synonymous with *A. nigrescens* Oliv., and that the blackness of the type specimen of the latter species is due partly to the method of drying and partly to the age of the material. Many of the specimens with pale leaves similar to those of the type specimen of *A. pallens* have the leaf-rhachis unarmed, a character which has been used to diagnose *A. nigrescens*.

E. MILNE-REDHEAD.

Desmodium setigerum (E. Mey.) Benth. ex Harv. in Harv. & Sond. Fl. Cap. **2**, 229 (1861-62) [Papilionaceae]. *Nicolsonia setigera* E. Mey. Comm. Pl. Afr. Austr. 124 (1836). *Desmodium Boivinianum* Baill. in Bull. Soc. Linn. Par. **1**, 431 (1884). *D. Humblotianum* Baill. l.c. 431 (1884).

Sub nomen *Desmodium hirtum* (L.) Guill. & Perr. descriptum est—Guill. & Perr. Fl. Senegamb. Tent. 209 (1833); Bak. in Oliv. Fl. Trop. Afr. **2**, 163 (1871) pro parte; Schindl. in Fedde Rep. Sp. Nov. Beih. **49**, 279 (1928); Hutch. & Dalz. Fl. W. Trop. Afr. **1**, 418 (1928); Bak. f. Leg. Trop. Afr. 329 (1929).

The name *Desmodium hirtum* (L.) Guill. & Perr. was a new combination based on *Hedysarum hirtum* L.* Unfortunately, the plant which Guillemain and Perrottet described and cited under the name *Desmodium hirtum* is not conspecific with *Hedysarum hirtum* L., a North American species now known as *Lespedeza hirta* (L.) Hornem.†

Article 54 of the International Rules of Botanical Nomenclature as amended at Amsterdam in 1935 reads "When, on transference to another genus, the specific epithet has been applied erroneously in its new position to a different plant, the new combination must be retained for the plant on which the epithet was originally based, and must be attributed to the author who first published it."

Thus *Desmodium hirtum* (L.) Guill. & Perr. becomes a synonym of *Lespedeza hirta* (L.) Hornem., and the plant described and cited by Guillemain and Perrottet must be known by its next legitimately published name, which is *Desmodium setigerum* (E. Mey.) Benth. ex Harv.

E. MILNE-REDHEAD.

Mundulea sericea (Willd.) A. Chev. in Compt. Rend. **180**, 1521 (1925) [Papilionaceae]; Greenway in Bull. Misc. Inform. Kew 1936,

* Sp. Pl. 748 (1753).

† Hort. Havn. 699 (1807).

245 (1936). *Cytisus sericeus* Willd. Sp. Pl. 3, 1121 (1803), non Noronha (1790) (nomen nudum).

When the synonymy of Mr. Greenway's paper was being checked, the fact that the combination *M. sericea*, had already been made by Dr. Chevalier was overlooked, owing to its not having been included in Index Kewensis, Suppl. 7. This was due to the fact that the new combination was printed in the same type as other names and was merely mentioned incidentally in the middle of an economic paper on Leguminosae-Tephrosieae cultivated in tropical countries as fish-poisons. It cannot be too strongly urged that all new names should be printed in a distinctive type, as time does not permit of long general papers being read through line by line for the purposes of the Index.

Cytisus sericeus Noronha, though earlier than *C. sericeus* Willd., was accompanied neither by a description nor by a reference to a previously published description. Noronha probably intended to use the epithet "sericeus" but he actually published it as "*Cytisus seriaeus*. Catiang gude sp. cogn." This indicated that he was dealing with an already known species bearing the vernacular name *Catiang gude*. As it might be argued that the citation of the vernacular name identified the species concerned and therefore connected the new name *Cytisus seriaeus* with a previously published description, thus validating its publication under International Rules, ed. 3, Art. 37, it may be pointed out that according to Filet, Plantkundig Woordenboek voor Nederlandsch-Indië, 154, n. 3958 (1888), the Sundanese vernacular name *Katjang-goedeh* is applied to two species belonging to different genera, namely, to *Cajanus indicus* Spreng. [*C. Cajan* (L.) Millsp.] and *Atylosia scarabaeoides* (L.) Benth. It seems clear, therefore, that the citation of a vernacular name cannot be accepted as an indirect reference to a previously published description. The name *Cytisus sericeus* (or *seriaeus*) Nor. (1790), not being validly published, *C. sericeus* Willd. (1803) is not a later homonym (see Art. 61).

E. MILNE-REDHEAD.

Teclea villosa M. R. F. Taylor, sp. nov. [Rutaceae]; affinis *T. natalensi* Engl., sed foliis minoribus obovato-cuneatis villosopubescentibus, petalis extra parce pilosis superne densius pilosis, fructibus villosis differt; a *T. pilosa* (Engl.) Verdoorn foliis 1-3-foliolatis, fructibus majoribus viridibus parcellissime hirsutis (haud glabris) facile distinguenda. *T. nobilis* Del. sec. Trees and Shrubs of Kenya Colony, 98 (1936), pro parte, non Del.

Frutex ramosissimus, usque ad 2 m. altus; ramuli juniores villosopubescentes. *Folia* plerumque 3-foliolata, nonnunquam 1- vel 2-foliolata; petiolus 0.5-1.5 cm. longus, leviter compressus, saepe anguste alatus, villosopubescentibus; foliola sessilia, 1-3 cm. longa, 0.8-1.8 cm. lata, obovata vel oblanceolata, basi cuneata, apice rotundata vel truncata vel interdum emarginata, integra, supra molliter pubescentia nervis prominentibus, subtus glabra

costa pilosa, manifeste glanduloso-punctata; costa saepe 2-3 mm. infra apicem bifurcata. *Racemi* breves, axillares. *Flores* unisexuales, pedicellis brevis; alabastra ovoidea, villosopubescentia. *Calyx* minutus, 4-lobatus, lobis late deltoideis. *Petala* 4, 3-4 mm. longa, oblonga, marginibus et apice incurva, extra leviter pilosa sed apicem versus villosa. *Flores* ♂ :—*Stamina* 4; filamenta 5 mm. longa. *Ovarium* abortivum, minutum, villosissimum. *Flores* ♀ :—*Staminodia* 4, parva. *Ovarium* globosum, dense villosum, 1-2 mm. longum, 1 mm. latum, 1-loculare; ovula 2; stylus crassus, brevissimus, basi articulatus, mox deciduus; stigma saturate brunneum, late peltatum. *Fructus maturi* virides, irregulariter oblongo-ovoidei, 12-15 mm. longi, 7-9 mm. diametro, carnosi, valde glandulosi, parcissime hirsuti; semina solitaria.

KENYA COLONY. Cultivated in Nairobi Arboretum, without origin or name of collector, no. 111 (Herb. Imp. For. Inst. Oxon. 21022) :—native name *Munderendu*.

TANGANYIKA TERRITORY. Shinyanga District. Beda Road Kopjes, amongst great granite rocks clothed with *Commiphora Eminii* and primaeval thicket, 1170 m., May 1935, *Burt* 5123 (♂ fl.) (type) and 5124 (♀ fl. and young fr.) :—a thickly branched shrub to 1.8 m. high; bark dark; leaves dark green, aromatic when crushed. Mwamala Kopje, Shinyanga, locally common among *Commiphora Eminii* on thicketed rocky hills, 12 March 1937, *Burt* 5560 (fruits in spirit). Wdode Kopje, Shinyanga, locally common among *Commiphora Eminii* thicketed rocky hills, 1200 m., 7 March 1937, *Burt* 5561. Usambara District. Mkomazi, half way up the mountain opposite Lassa, local in thickets of *Commiphora*, tree *Euphorbia* spp. etc., 1050 m., 30 Nov. 1935, *Burt* 5331 :—thick evergreen shrub 1.8 m. high; crushed leaves smell like ivy leaves.

Raphionacme longituba E. A. Bruce, sp. nov. [Asclepiadaceae]; affinis *R. lanceolatae* Schinz var. *latifoliae* N.E. Br., sed floribus majoribus, corollae tubo longiore, coronae lobis integris differt.

Herba perennis, 15-23 cm. alta, tubere crasso depresso-concavo; caules erecti, pauci-ramosi, parce patenti-pubescentes, sulcati. *Folia* breviter petiolata; petiolus circiter 2 mm. longus, pubescens, supra canaliculatus; lamina oblonga vel obovato-elliptica, basi cuneata vel rotundata, apice rotundata, apiculata, 2.5-6 cm. longa, 1-2.7 cm. lata, utrinque parce puberula, demum glabrescens, margine scabrido-puberula; nervi laterales approximati, numerosi, utrinsecus circiter 30, angulo recto patentes, inter se paralleli, costa media supra canaliculata subtus prominente. *Cymae* ex axillis foliorum ortae, pedunculatae; pedunculi 1-2 cm. longi, patenti-pubescentes, plerumque 3-flori, nonnunquam ramosi et usque 8-flori; bracteae lineari-subulatae vel lineari-lanceolatae, usque 5 mm. longae, pubescentes. *Flores* pedicellati; pedicelli usque 1 cm. longi sed plerumque breviores, bibracteolati, bracteolis

lineari-subulatis circiter 4 mm. longis. *Calycis lobi* lanceolati vel lineari-lanceolati, acuminati, nonnunquam recurvati, 4–6 mm. longi, extra patenti-pubescentes, intus glabri. *Corolla* in alabastro breviter patenti-pubescent, inferne cylindrica, sulcata, superne subito dilatata, conico-ovoidea, acuta, sub anthesi hypocrateriformis, pallide rosea vel alba purpureo-tincta, tubo circiter 1 cm. longo 3 mm. lato, lobis patentibus lanceolatis apice acutis circiter 1 cm. longis basi 3.5 mm. latis carinatis extra pubescentibus intus glabris. *Coronae lobi* 5, integri, apice corollae tubi inserti, lanceolati, apice longe apiculati vel caudati, usque 7 mm. longi, 2.5 mm. lati, glabri, dorso prominente carinati. *Stamina* apice corollae tubi inserta, antheris circiter 2 mm. longis supra stylum conniventibus. *Fructus* ignotus.

TANGANYIKA TERRITORY. Tabora District. Kakoma, south of Tabora, on ant hills, 1170 m., 13 Jan. 1936, *H. M. Lloyd* 45 (type) :—white flowers tinged with purple.

NORTHERN RHODESIA. Mazabuka, c. 1000 m., 7 Dec. 1931, (Cent. Research Sta. 540) :—herb 1.5–2 dm. with pale pink flowers, egg-shaped fruit and bowl-shaped 'bulb.' Mumbwa, *Mrs. Macaulay*, s.n.

Canthium Tophami *Bullock et Dunkley* sp. nov. [Rubiaceae]; floribus numerosis, stylis longissime exsertis distincta; a *C. huillensi* Hiern omnibus partibus glabris recedit; a *C. vulgari* (K. Schum.) Bullock pedunculis pedicellisque glabris, floribus minoribus, stylis longius exsertis differt.

Frutex scandens, statura ignota; ramuli glabri, demum plus minusve teretes, rigidi sed haud crassi, cortice atro-brunneo. *Folia* opposita, tenuiter coriacea, petiolis glabris circiter 1 cm. longis supra canaliculatis praedita; lamina elliptica vel oblongo-elliptica vel plus minusve ovata, usque ad 11 cm. longa et 5.5 cm. lata, apice subacuta vel saepissime obtuse et breviter cuspidata, basi plerumque late rotundata vel (folia immatura) basin versus acute angustata, supra plus minusve nitida, subtus ut videtur pallide viridia, utrinque glaberrima, nervis lateralibus utrinsecus circiter 6 haud prominentibus; stipulae interpetiolares, triangulares, apice caudatae, totae usque ad 8 mm. longae. *Cymae* ex axillis foliorum ortae, pluriflorae, pedunculatae, ramosae, glabrae vel bracteis parvis triangularibus tantum levissime ciliatae; pedunculi 1–1.5 cm. longi; pedicelli gracillimi, usque ad 1 cm. longi. *Flores* ut videtur viridi-lutei. *Calyx* (hypanthio incluso) globosus vel inferne latior circiter 15 mm. longus, glaber, limbo brevissime 5-dentato. *Corolla* alabastro 7–7.5 mm. longa, extra glabra, intus fauce tantum densissime villosa, tubo urceolato 4 mm. longo et 1.5 mm. diametro, limbo 5-fido segmentis sub anthesin recurvis 2.5–3 mm. longis oblongis acutis. *Stamina* 5, filamentis 0.5 mm. longis vel saepe brevioribus, antheris basin versus dorsifixis partim exsertis ellipticis utrinque acutis apice mucronatis basi breviter caudatis. *Ovarium*

parvum, biloculare; ovula in loculis solitaria; discus annularis, carnosus; stylus 1 cm. longus, longe exsertus; stigma mitriforme, 1 mm. longum, apice bifidum. *Drupae* non visae.

NYASALAND. Zomba District, Namiwawa, Nov. 1935, *Clements* 561 (type):—bark used for scabies; native name *mGalamasi*. Soche Mt. Forest Reserve, Nov. 1931, *Topham* 898 (Herb. Imp. For. Inst. Oxon.).

Canthium Tophami Bullock & Dunkley technically stands alone on account of the very long style, but other characters of leaves, inflorescence and flowers place it between *C. huillense* Hiern and *C. vulgare* (K. Schum.) Bullock.

The possibility of the occurrence of a short-styled form of *C. Tophami* must not be overlooked, since heterostyly is known to occur in the genus, and is probably widespread.

Lasianthus seseënsis M. R. F. Taylor, sp. nov. [Rubiaceae]; affinis *L. mayumbensi* R. Good, sed ramis ramulisque compressis haud teretibus, petiolis longioribus, foliis brevius acuminatis subtus praesertim in nervis breviter adpresse pilosis, stipulis latioribus multo majoribus extra pilosis, corollis roseis nec albis, stylo piloso nec glabro differt; a *L. kilimandscharico* Engl. nervis lateralibus foliorum late patentibus leviter arcuatis haud abrupte adscendentibus facile distinguenda.

Frutex erectus, usque ad 1.5 m. altus. *Rami* ramulique compressi, leviter pilosi, vel demum glabri. *Folia* herbacea, leviter discoloria; petiolus 1.5–3 cm. longus; lamina elliptico-lanceolata vel oblongo-lanceolata vel plus minus oblanceolata, 13–18 cm. longa et 2.5–5.5 cm. lata, apice sensim acute acuminata, basi cuneata, supra glabra et plus minusve nitida, subtus praesertim in costa et nervis manifeste adpresse pilosa; nervi laterales utrinsecus circiter 14, late patentes, leviter arcuati; stipulae plus minusve scariosae, 6 mm. longae, late deltoideae, acutae, extra leviter pilosae. *Flores* sessiles, bibracteati, 7–9 mm. longi, ex axillis foliorum in glomerulis 3–5-floris orti. *Bracteae* parvae, deltoideae, acutae, extra pilosae. *Calyx* 3–5-lobatus; lobi triangulari-lanceolati, acuti, 5 mm. longi, extra pilosi; tubus lobis duplo brevior. *Corolla* cylindrica, apicem versus ampliata, extra glabra vel apicem versus pilis longis leviter induta, rosea; lobi 4–5, triangulares, erecti, 7 mm. longi, intus villosi vel apicem versus minus dense pilosi; tubus parte inferiore intus glaber, parte ampliato intus dense villosus. *Stamina* 5–6, fauce inserta; filamenta brevissima, antheris oblongis 1 mm. longis. *Ovarium* 1.5 mm. diametro, apice umbilicato-depressum; discus carnosus. *Stylus* pilosus, 4–5 mm. longus, vix exsertus; rami 5, lineares, 1 mm. longi. *Fructus* 5 mm. diametro, glauco-caerulei, carnosi, circiter 10-lobati, in canaliculis inter lobos parce pilosi, ceterum glabri; pyreni circiter 10.

UGANDA. Entebbe District: Sese Islands in Lake Victoria Nyanza. Locally dominant in undergrowth in Towa forest at about

1200 m., 30 June 1935, *A. S. Thomas* 1340 (type):—shrub, 1.2 m. high; flowers small, pink; fruits porcelain blue berries. Dominant sub-shrub in forest beside lake, sometimes in pure stands, Bugala, 1140 m., 20 Febr. 1933, *A. S. Thomas* 821. Subdominant in undergrowth of rain-forest on clay soil, Bugala, 1170 m., 3 June 1932, *A. S. Thomas* 3:—erect shrub, height 1.5 m.; berries porcelain blue. Frequent in the forests at Sozi, 1110 m., Dec. 1922, *Maitland* 383:—shrubby plant; fruits waxy white at first then deep blue. Rare near river's edge in forest, Bugaba, 1200 m., Nov. 1915, *R. Dümmer* 2647:—shrub 1.5 m. high.

Erlangea (Bothriocline) congesta *M. R. F. Taylor*, sp. nov. [Compositae-Vernonieae]; habitu et foliis iis *E. monticolae* *M. R. F. Taylor* similis, sed capitulis majoribus, floribus pluribus involucri bracteis pluriseriatis interioribus scariosis, achaeniis pluricostatis differt.

Suffrutex usque 1 m. altus. *Rami* divaricati, subteretes, brunnei, leviter striati, apicem versus sericeo-lanati, inferne demum glabrescentes, internodiis brevissimis, 0.5–1 cm. longis, rami ad nodos phyllopodiis persistentibus praediti. *Folia* opposita vel subopposita, ramorum apicem versus congesta, 3.5–7 cm. longa; petioli 4–5 mm. longi, basi saepe connati, circa ramum annulum angustum formantes; lamina ovato- vel elliptico-lanceolata, basi cuneata, apice acuta vel interdum obtusa, 3–6 cm. longa, 1.5–3 cm. lata, margine basin versus fere integra, ceterum serrata vel crenato-serrata, supra fusco-olivaceo-viridis vel griseo-viridis, leviter sericeo-tomentosa demum glabrescens praeter nervos, subtus dense albido- vel griseo-tomentoso-lanatae; nervi laterales utrinsecus 10–14, venis dense reticulatis supra et subtus prominentibus. *Inflorescentia* terminalis, paniculato-corymbosa, congesta, breviter stipitata, capitulis 5–15 pedunculatis 2–4 mm. longis. *Capitula* floribus 120–130 instructa, 1–1.25 cm. diametro, odorata. *Involucri bractee* numerosae, 7–8-seriatae, congestae, apice purpureae, bractee exteriores late ovato-lanceolatae vel deltoideae, 6–7 mm. longae, 2–2.5 mm. latae, acutae vel interdum obtusae, extra dense lanatae, superne intus tomentosae, intermediae obovato-lanceolatae, 9 mm. longae, 3 mm. latae, acuminatae, basi cuneatae, margine late scariosae, extra apicem versus tomentosae; interiores anguste lanceolatae, 7–8 mm. longae, 1.5–2 mm. latae, sensim acuminatae, basi cuneatae, apicem versus minute laciniatae. *Corollae* ex involucrio exsertae, pallide purpureae, glabrae, 7–9 mm. longae; tubus subcylindricus, apicem versus ampliat, 5–6 mm. longus; lobi lineares, margine et apice crassi, 2–3 mm. longi. *Antherae* vix exsertae, 2 mm. longae, apice et basi acutae. *Styli lobi* filiformes, sensim acuti, leviter papilloso, 1.75–2 mm. longi. *Achaenia matura* glabra, crassa, angulata, oblonga vel late elliptica, 1.75–2 mm. longa, 1 mm. lata, 7–8-costata, costis laevibus flavidis crassissimis latis, regionibus inter costas glandulis

minutis brunneis obsitis. *Pappus* e setis 8–10 pallide fulvis erectis rigidis 1–3 mm. longis scabridis caducis sistens.

UGANDA. Karamoja District. Kaiko Peak (summit), Mt. Debasien, January 1936, *Eggeling* 2712 (type):—Bushy herb 9 dm. high; underside of leaf woolly and white; flowers purple.

Erlangea inyangana (N.E.Br.) B. L. Burt, comb. nov. [Compositae-Vernonieae]. *Bothriocline inyangana* N.E.Br. in Kew Bull. 1906, 107 (1906). *Erlangea Rogersii* S. Moore in Journ. of Bot. 52, 333 (1914).

Erlangea (Bothriocline) monticola M. R. F. Taylor, sp. nov. [Compositae-Vernonieae]; affinis *E. tomentosae* S. Moore, sed habitu suffrutescente divaricato, internodiis brevioribus, ramis phyllopodiis persistentibus praeditis, capitulis majoribus floribus paucioribus instructis, involucri bracteis viridibus haud paleaceis infra apicem lanatis differt; ab *E. paleacea* Chiov. foliis siccitate haud nigrescentibus, capitulis majoribus pallide purpureis floribus pluribus instructis, bracteis haud glabris distinguenda.

Suffrutex usque 1.25 m. altus. *Rami* divaricati, subteretes, griseo-brunnei, leviter striati, sericeo-albido-tomentosi (apicem versus densius), inferne demum glabrescentes, phyllopodiis persistentibus, internodiis brevissimis 0.75–1.25 cm. longis. *Folia* opposita, decussata, ramorum apicum versus congesta, 5–12 cm. longa; petiolus 0.5–1 cm. longus, basi 3–4 mm. persistens, valde dilatatus, cum petiolo opposito connatus; lamina ovato-lanceolata vel oblongo-lanceolata, basi cuneata, apice sensim acuminata, 4–11 cm. longa, 1.5–4 cm. lata, supra olivaceo-viridis, leviter tomentosa demum glabrescens, ad nervos sericeo-albido-tomentosa, subtus dense albido- vel griseo-tomentosa; margine basin versus fere integra vel serrata, dentibus triangularibus apice crassis; nervi laterales utrinsecus circiter 10, venis reticulatis subtus prominentibus. *Inflorescentia* terminalis, panicula, dense corymbosa, breviter stipitata, 3.5–7 cm. lata, 2–3.5 cm. alta, capitulis 20–60 in glomerulis 2–7 mm. pedunculatis. *Capitula* floribus 30–35 instructa, 4–7 mm. diametro, odorata. *Involucri bractee* 4-seriatae, imbricatae, pallide virides, apice plerumque purpureae, demum fulvae, haud paleaceae; bractee exteriores ovato-lanceolatae, 3–4 mm. longae, 1.5–2 mm. latae, acutae vel interdum obtusae, dense tomentosae; interiores lanceolatae vel lanceolato-attenuatae, 5–7 mm. longae, 1.5–2 mm. latae, margine inconspicue scariosae, apice apiculatae, inferne lanatae. *Corollae* ex involucrio exsertae, pallide purpureae, glabrae, 7 mm. longae; tubus apicem versus ampliatus, 4 mm. longus; lobi lineares, 3 mm. longi. *Antherae* vix exsertae, 2 mm. longae, apice haud attenuatae, basi rotundatae. *Styli lobi* filiformes, leviter papilloso, 1.75–2.25 mm. longi. *Achaenia matura* glabra, crassa, turbinata, nonnunquam oblonga, 1–1.75 mm. longa, 0.75 mm. lata, 5–7 costata, costis laevibus flavidis prominentibus, regionibus inter costas depressis minute

glandulosis, apice saepe in annulos ampliatis. *Pappus* e setis 6–8 albidis erectis rigidis 1·5–2·5 mm. longis scabridis caducissimis sistens.

UGANDA. Karamoja District. Summit of Mt. Moroto from 2790 m. to 2910 m., February 1936, *Eggeling* 2907 (type):—undershrub to 1·2 m. high; flowers purple.

Pleiotaxis arenaria *Milne-Redhead*, sp. nov. [Compositae–Mutisieae]; a *P. Gossweileri* S. Moore capitulis minoribus angustioribus, phyllis involucri minoribus angustioribus araneo-tomentosis differt.

Herba perennis, erecta, circiter 4 dm. alta; caules leviter ramosi, dense araneo-tomentosi, longitudinaliter striati. *Folia* lanceolata vel oblongo-lanceolata, sessilia, basi plus minusve rotundata, apice acuta, margine irregulariter crenato-denticulata, usque 6 cm. longa, 1·5 cm. lata, supra rugosa, aranea, subtus dense tomentosa. *Capitula* 1–3 in racemos terminales vel axillares disposita, circiter 2 cm. longa, vix 1 cm. lata, breviter pedunculata, pedunculis circiter 0·5 cm. longis; bractee racemorum foliis minutis vel phyllis involucri infimis similes; phylla involucri multi-seriata, exteriora ovata, obtusa, vix 3 mm. longa, dense araneo-tomentosa, interiora lanceolata-oblonga, circiter 11 mm. longa, 2·5 mm. lata, apice obtusa, leviter tomentosa, rubescentia. *Corolla* exserta, splendide sanguinea; tubus 9·5 mm. longus, parte inferiore anguste cylindrica 7 mm. longa, parte superiore cupuliformi 2·5 mm. longa; lobi lineari-acuti, circiter 4 mm. longa, reflexa. *Stamina* apice partis tubi cylindricae affixa; filamenta circiter 2 mm. longa; antherae 6·5 mm. longae exsertae, caudis 2 mm. longis villosis. *Ovarium* 4·5 mm. longum, villosum; stylus cum stigmate 13·5 mm. longus; lobi stigmatis circiter 1 mm. longis. *Pappi setae* rigidae, 11 mm. longae, barbellatae. *Achaenis* non visa.

NORTHERN RHODESIA. Mwinilunga District. On sand in *Cryptosepalum* woodland a few miles south of Mwinilunga, 26 Aug. 1930, *Milne-Redhead* 970 (type):—tomentose perennial, about 4 dm. high; flowers deep crimson. In bush at about 1350–1500 m. elevation, from March to July 1929, *Miss Marks* 117:—small red thistle with greyish woolly leaves.

Volkensia O. Hoffm. The genus *Volkensia* [Compositae–Vernonieae] was described by O. Hoffmann in Engler & Prantl, *Natürlichen Pflanzenfamilien* 4 pt. 5, 387 (1893) and in Engler, *Botanische Jahrbücher* 20, 219 (1894); the single species was *V. argentea* O. Hoffm. from Kilimanjaro. Three further species have since been added by German authors (*V. Elliotii* Muschl., *V. glomerata* O. Hoffm. & Muschl. and *V. latifolia* Muschl.), but in this country the genus has been confused with its near ally *Erlangea* Sch. Bip. *Volkensia* closely resembles *Erlangea* sect. *Bothriocline* in general appearance but differs in having the leaves constantly alternate whereas they are generally opposite in *Erlangea* sect. *Bothriocline*

though alternate in other sections of the genus ; *Volkensia* also has smaller capitula containing fewer flowers, and fewer pappus setae which arise within a cartilaginous rim which crowns the achene.

The classification of the genera of *Vernonieae* is at present very unsatisfactory. *Erlangea* is separated from *Vernonia* only by its caducous pappus and contains a heterogeneous assemblage of species. No useful purpose can be served by considering in detail the relationship of *Volkensia* and *Erlangea* without taking into consideration the general question of the status of genera within this group. For the present, therefore, it seems most convenient to retain *Volkensia* for the natural assemblage of species which may be grouped round *V. argentea* and the following transfers from *Erlangea* are therefore proposed.

Volkensia Duemmeri (S. Moore) B. L. Burtt, comb. nov. *Erlangea Duemmeri* S. Moore in Journ. Linn. Soc. London, Bot. **47**, 260 (1925).

Volkensia moramballae (Oliv. & Hiern) B. L. Burtt, comb. nov. *Vernonia moramballae* Oliv. & Hiern in Oliv. Fl. Trop. Afr. **3**, 278 (1877). *Bothriocline moramballae* (Oliv. & Hiern) O. Hoffm. in Engl. Pflanzenw. Ost-Afr. C, 403 (1895). *Erlangea moramballae* (Oliv. & Hiern) S. Moore in Journ. Linn. Soc. London, Bot. **35**, 313 (1902).

Volkensia ruwenzoriensis (S. Moore) B. L. Burtt, comb. nov. *Erlangea ruwenzoriensis* S. Moore in Journ. Linn. Soc. London, Bot. **35**, 309 (1902). *Volkensia Elliotii* Muschl. in Engl. Bot. Jahrb. **46**, 52 (1911).

Erlangea ruwenzoriensis and *Volkensia Elliotii* are based on the same gathering, Scott Elliot 7892.

B. L. BURTT.

Ipomoea (Eriospermum) lanata E. A. Bruce, sp. nov. [Convolvulaceae] ; affinis *I. verbascoidi* Choisy sed foliis majoribus, bracteis late obovatis majoribus differt ; ab *I. macrocalyce* Hall. f. cymis axillaribus, corolla glabra, calycis lobis angustioribus minoribus facile distinguenda.

Planta scandens ; caules sulcati, fulvo-lanato-tomentosi, circiter 7 mm. diametro. *Folia* petiolata ; petiolus 5-11 cm. longus, e basi leviter ampliatus, supra leviter canaliculatus, fulvo-lanato-tomentosus ; lamina oblongo-ovata vel cordato-ovata, basi truncata vel late cordata, apice rotundata vel subacuta, apiculata, 15-30 cm. longa, 8-20 cm. lata, supra parce costa media et nervis lateralibus densiore lanato-pubescent, subtus albido- vel cinereo-lanata, margine leviter undulata ; nervi laterales utrinsecus circiter 11, conspicui, supra impressi. *Inflorescentiae* cymae densae, circiter 6-10-florae vel abortu pauciores, ex axillis foliorum pedunculatae ; pedunculi petiolis breviores, 2-3 cm. longi, fulvo-lanato-tomentosi, canaliculis glabris muniti ; bractae magnae, late obovatae, basi cuneatae, apice rotundatae, apiculatae vel emarginatae, 3-4.5 cm. longae, 2-3 cm. latae, extra lanato-tomentosae, intus glabrescentes, nervosae, nervis ascendentibus costa media subparallelis, margine

crispo-undulatae, abortu 2-florae ; bracteolae 2, anguste obovatae, apice rotundatae, extra parce tomentosae, intus glabrae. *Flores* pedicellati, pedicellis 0.5–1 cm. longis. *Calyx* usque ad basin lobatus ; lobi imbricati, 2 exteriores .3 interioribus paullo majores et eos includentes, oblongo-elliptici, apice rotundati vel subacuti, circiter 2.2 cm. longi, 1.1 cm. lati, extra fulvo-lanato-tomentosi, intus glabri, interioribus medio et apice tomentos ceterum glabris. *Corolla* coccinea vel purpurea, infundibuliformis, glabra, 6.5–7.5 cm. longa, tubo basin versus contracto usque 1.5 cm. lato apice in lobos quinque 5.5 cm. diametro expanso. *Stamina* 5, circiter 1 cm. supra basin corollae inserta ; filamenta gracilia, circiter 2 cm. longa, basi ampliata pilis munita ; antherae lineares, circiter 5 mm. longae. *Ovarium* subglobosum, 2 mm. altum, glabrum, disco annulari ; stylus simplex, gracilis, circiter 3 cm. longus.

TANGANYIKA TERRITORY. Manyoni District. Kazikazi, climbing over shrubs, *Canthium* etc. in *Berlinia-Brachystegia* woods, 1300 m., 21 Febr. 1934, *Burt* 5062 (type) :—climber with crimson-lake flowers. Tabora District. Kakoma, south of Tabora, on ant-hill, 1170 m., 5 Febr. 1936, *H. M. Lloyd* 43 :—trailer with purple flowers.

It is difficult to describe the inflorescence accurately in detail as the material is insufficient. There are 2 flowers in the axil of each bract and there are up to about 6 bracts in each inflorescence, so there are 12 potential flowers, but a number of these are abortive, and in the two specimens examined there are not more than four flowers mature at the same time in any one inflorescence.

***Buchnera scabridula* E. A. Bruce**, sp. nov. [Scrophulariaceae] ; affinis *B. usafuensi* (Engl.) Melch., sed foliis anguste oblongo-oblancoelatis, inflorescentia densiore brevior in statu fructifero haud interrupta, floribus minoribus differt.

Herba usque 0.6 m. alta, leviter ramosa ; caules erecti, rigidi, subteretes, nonnunquam parce scabridi, internodiis 1–3 cm. longis, lineis scabrido-puberulis cum basi foliis alternantibus. *Folia* alterna vel subopposita, sessilia ; caulina anguste oblongo-oblancoelata, apice obtusa, apiculata, basi cuneata, 2–3 cm. longa, 5–6 mm. lata, supra parce scabrida, subtus costa media prominente, margine revoluta, utrinque scabrida ; folia superiora minora, in bracteis sensim transeuntia. *Inflorescentiae* terminales, dense spiciformes, in statu fructifero haud interruptae, 4–8 cm. longae, rhachi sulcato scabrido ; bractee oblongo-lanceolatae, apice sensim longe acuminatae, nonnunquam recurvatae, 7–9 mm. longae, circiter 2 mm. latae, margine scabridae. *Flores* subsessiles, bibracteolati ; bracteoli lineares, apice acuminati, circiter 5 mm. longi, margine scabridi. *Calyx* tubulatus, 10-nervosus, 5-lobatus, tubo angusto circiter 7 mm. longo 2 mm. diametro glabro, lobis anguste triangulari-acuminatis 2 mm. longis scabridis. *Corolla* rosea vel pallide purpurea ; tubus e calyce valde exsertus, leviter curvatus, circiter 1 cm. longus, 1.5 mm. latus, fauce dilatatus, extra glaber,

intus apicem versus pilis paucis instructus, ceterum glaber ; lobi obovati, apice rotundati, basi cuneati, circiter 5 mm. longi, 3 mm. lati, glabri. *Stamina* circiter medio tubo affixa, filamentis 1 mm. longis, antheris 1.5 mm. longis apice acuminatis. *Ovarium* ellipsoideum, glabrum, 2-2.5 mm. longum, stylo 2.5 mm. longo. *Capsula* oblongo-ellipsoidea, 7 mm. longa, 2.5 mm. diametro, apice truncata, apiculata.

UGANDA. Karamoja District. Mt. Debasien, in alpine meadows, about 3000 m., Jan. 1936, *Eggeling* 2766 :—herb with pink flowers.

KENYA COLONY. Marakwet Hills, in scrub near Moyben river, 2800 m., April 1935, *Dale* (For. Dep. 3428) (type) :—herb up to 6 dm. ; corolla pale purple.

Dicliptera arenaria *Milne-Redhead* sp. nov. [Acanthaceae] ; *D. betonicoïdi* S. Moore valde affinis, sed habitu pauci-ramoso, inflorescentiis longioribus et latioribus, bracteis conspicue villosociliatis, bractea postica magis acuta, floribus majoribus differt.

Herba annua, circiter 6 dm. alta ; caules simplices vel superne leviter ramosi, obscure angulati, plus minusve pubescentes, internodiis usque 12 cm. longis. *Folia* inferiora non visa ; folia superiora plus minusve deflexa, subsessilia, oblonga vel oblongo-lanceolata, 7.5 cm. longa, 0.9 mm. lata, basi rotundata, apice subacuta, margine hispida ; lamina cystolithis dense instructa ; petioli brevissimi, cum costis pubescentes. *Inflorescentiae* terminales vel interdum axillares, valde congestae, usque 4 cm. longae, 2.5 cm. diametro, cymis omnibus ad flores 1 vel 2 redactis ; bractee inflorescentiam totam subtendentes lineari-lanceolatae, aristatae, circiter 8 mm. longae, ciliatae ; bractee oppositae cymam includentes inaequales, margine villosociliatae, pilis albis usque 1.5 mm. longis ; bractea antica obovata, 6 mm. longa, 2.7 mm. lata, basi cuneata, apice breviter acuminata, trinervis, nervi et apice bractee viridibus et pubescentibus, ceterum hyalina, glabra, sed parce glandulosa ; bractea postica oblanceolata, 9 mm. longa, 1.8 mm. lata, apice acuta, parte superiore et nervis viridibus, ceterum hyalina ; bracteolae 4 (utroque latere 2), aequales, lineari-lanceolatae, subulatae, 6 mm. longae, 1 mm. latae, hyalinae, costa viridi, margine ciliatae. *Calyx* fere usque ad basin 5-partitus, 6 mm. longus, lobis lineari-lanceolatis, hyalinis, margine ciliatis. *Corolla* roseo-purpurea, circiter 11 mm. longa, superne extra pubescens, bilabiata ; tubus cylindricus, 5.5 mm. longus, angulo 180° spiraliter contortus ; labium posticum rhomboideum, circiter 4.5 mm. longum, 4 mm. latum, apice integrum, rotundatum ; anticum ellipticum, 5.5 mm. longum, 3.5 mm. latum, apice rotundatum, inconspicue 3-dentatum. *Stamina* 2, 0.5 mm. infra apicem corollae tubi inserta ; filamenta filiformia, 3.5 mm. longa, parce pubescentia ; antherae purpureae, biloculares, loculis superpositis subglobosis vix 1 mm. longis. *Ovarium* circiter 1.2 mm. altum, 4-ovulatum ; stylus filiformis, 8.5 mm. longus, parce pubescens, stigmate apicali minute bifurcato ; discus irregulariter

cupularis, circiter 1 mm. altus. *Capsula* 4·5 mm. longa, compressa, subsessilis. *Semina* 2, brunnea, valde compressa, elliptica vel suborbicularia, basi emarginata, 2·0–2·7 mm. diametro, circiter 0·3 mm. crassa.

NORTHERN RHODESIA. Mwinilunga District. Among dead grass on sandy ground in *Cryptosepalum* woodland not far from R. Wamibobo, 6 Aug. 1930, *Milne-Redhead* 842 :—annual herb, up to 6 dm. high ; lower leaves fallen ; flowers mauve in bracteate heads.

Dicliptera capitata *Milne-Redhead*, sp. nov. [Acanthaceae] ; a *D. Rogersii* Turrill inflorescentiis terminalibus sessilibus, foliis cystolithis instructis, bracteis lanceolatis, seminibus multo majoribus differt.

Herba annua, usque 3 dm. alta, erecta, parce ramosa vel simplex, ramis saepe horizontalibus ; caules parce pubescentes vel puberuli, inconspicue angulati ; internodia 3–7 cm. longa. *Folia* oblongo-lanceolata, acuta, basin versus in petiolos 2 mm. longos constricta, usque 5·5 cm. longa, 0·5 cm. lata, margine, nervis, petiolis nodisque parce et longe hispidis, discolora, cystolithis valde numerosis transversis utrinque dense instructa. *Inflorescentiae* terminales, sessiles, capitatae, usque 15 mm. longae, 23 mm. latae, cymis quisque ad 1–2 flores redactis ; duae bractae oppositae cymam includentes lanceolatae, acutae vel acuminatae, 8–9 mm. longae, 2 mm. latae, rigidae, 1–3-nerves, praecipue nervis pubescentes, margine valde ciliatae ; bracteolae 4, duae utroque latere, inaequales, anguste lanceolatae, valde acutae, 5–6 mm. longae, pubescentes. *Calyx* fere usque ad basin 5-partitus ; segmenta linearia, valde acuta, 4 mm. longa, tenuiter chartacea. *Corolla* pallide roseo-purpurea, bilabiata, extra deflexo-pilosa ; tubus cylindricus, 5 mm. longus, spiraliter contortus (angulo 180°) ; labium anticum late lanceolatum, apice obtuse breviterque tridentatum, 5·5 mm. longum, 2·3 mm. latum, purpureo-striatum ; labium posticum late triangulare, obtusum, 5·0 mm. longum, 4·5 mm. latum. *Stamina* 2, exserta ; filamenta 4·5 mm. longa, parce deflexo-pilosa ; antherae roseo-purpureae, biloculares, loculis superpositis subglobosis. *Ovarium* 1·5 mm. altum, glabrum, 4-ovulatum ; stylus 7 mm. longus, filiformis, stigmatate minute bifurcato ; discus cupularis, 0·7 mm. altus. *Capsula* 5 mm. longa, compressa, subsessilis. *Semina* 2, nigra, valde compressa, suborbiculata, emarginata, 2·8 mm. diametro.

TANGANYIKA TERRITORY. Songea District. In savannah bush at 900 m. elevation by R. Likuyu between Songea and Manda, 31 Aug. 1930, *Migeod* 838 (Herb. Mus. Brit.) :—herb with small root and jointed stalks up to 6 dm. high ; leaves in pairs, far apart, 4 cm. \times 0·6 cm. ; flowers in terminal bracteate heads.

NORTHERN RHODESIA. Solwezi District. Path-side in *Brachystegia* woodland at Solwezi Boma, 13 June 1930, *Milne-Redhead* 493 (type) :—annual weed, up to 3 dm. high ; flowers mauve. Mumbwa District. Near Mumbwa, 1911, *Mrs. Macaulay* 670.

Dicliptera nemorum *Milne-Redhead*, sp. nov. [Acanthaceae]; a *D. umbellata* (Vahl) Juss. bracteis angustioribus oblongis (haud obovato-ob lanceolatis) dense glandulosis, a *D. Rogersii* Turrill foliis ovatis vel ovato-lanceolatis, seminibus asperrimis differt.

Herba perennis, radicibus fibrosis; caules erecti vel decumbentes, interdum basin versus radicanter, usque 3 mm. diametro, 6 dm. alti, obscure angulati, leviter adpresso-pubescentes; internodia usque 10 cm. longa, saepe supra nodos tumida. *Folia* ovata vel ovato-lanceolata, usque 9 cm. longa, 2.5 cm. lata, basi in petiolum 1-1.5 cm. longum parce adpresse pubescentem attenuata, apice leviter acuminata, acuta; lamina parce adpresse pubescens, cystolithis instructa. *Inflorescentiae* terminales vel axillares, congestae, vix 2 cm. longae, 2 cm. latae, cymis omnibus ad flores 1-2 redactis; bractae inflorescentiam totam subtendentes, aristatae, circiter 7 mm. longae; bractae oppositae cymam includentes inaequales, dense glandulosae, margine basin versus ciliatae; bractae major oblongae, sursum leviter latior, 7 mm. longae, 1.5 mm. latae, apice aristato-acuminatae; bractea minor oblongo-lanceolata, 6 mm. longa, 1 mm. lata, apice aristato-acuminata; bracteolae 4 (utroque latere 2), aequales, lineares acutae, 4 mm. longae, 0.5 mm. latae, dense glandulosae. *Calyx* fere usque ad basin 5-partitus, 4 mm. longus, dense glandulosus, segmentis linearibus 0.5 mm. latis bracteolis similibus. *Corolla* rosea, circiter 14.5 mm. longa, superne extra pubescens, bilabiata; tubus cylindricus, 7.5 mm. longus, angulo 180° spiraliter contortus, glaber; labium posticum obovato-oblongum, 7 mm. longum, 3 mm. latum, apice integrum, rotundatum; anticum obovato-oblongum, 7 mm. longum, 4 mm. latum, apice breviter 3-dentatum. *Stamina* 2, 0.5 mm. infra apicem corollae tubi inserta; filamenta filiformia, 10.5 mm. longa, parvis pubescentia; antherae purpureae, biloculares, loculis superpositis subglobosis vix 1 mm. longis. *Ovarium* circiter 1.2 mm. altum, 4-ovulatum; stylus filiformis, circiter 16.5 mm. longus, glaber, stigmate minute bifurcato; discus cupularis, 0.6 mm. altus. *Capsula* 5 mm. longa, compressa, subsessilis. *Semina* 4, brunnea, leviter compressa, suborbiculata, vix 1.5 mm. diametro, valde aspera.

NORTHERN RHODESIA. Solwezi District. In shade of evergreen vegetation by Mbulungu Stream west of Mutanda Bridge, 15 July 1930, *Milne-Redhead* 712:—perennial up to 6 dm. high in flower and fruit; flowers rose-coloured.

Justicia (Rostellularia) syncollotheca *Milne-Redhead*, sp. nov. [Acanthaceae]; a *J. phyllostachydi* C. B. Cl. omnibus partibus minoribus, calycis lobis glanduloso-pubescentibus recedit.

Herba annua, circiter 3-5 dm. alta, ramosa; rami basin versus horizontales, apicem versus ascendentes, parce pubescentes, obscure angulati; internodia usque 8 cm. longa. *Folia* inferiora non visa; folia superiora ovata vel ovato-lanceolata, 2-3 cm. longa, 4-8 mm. lata, utrinque parce albo-hirsuta. *Inflorescentiae* terminales vel

axillares, substrobiliformes, multiflorae, usque 2.5 cm. longae, 1.5 cm. latae; bracteae obovato-ellipticae vel oblanceolatae, circiter 6 mm. longae, 3 mm. latae, apice vix acutae, basin versus attenuatae, utrinque breviter pubescentes, margine pilis albis ciliatae. *Calyx* 4 mm. longa, fere usque ad basin 5-partitus; segmenta lanceolato-subulata, dense et breviter glandulosa et etiam pilis paucis longioribus simplicibus instructa. *Corolla* rosea, 6.2 mm. longa, extra pubescens, bilabiata; tubus cylindricus, 3.7 mm. longus; labium posticum deltoideum, 2.3 mm. longum, basin versus circiter 2 mm. latum, apice corniculis duobus 0.5 mm. longis divergentibus instructum; labium anticum late obovatum, 2.5 mm. longum, trilobatum. *Stamina* 2, circiter 0.7 mm. infra apicem tubi corollae affixa; filamenta circiter 2.0 mm. longa; loculi discreti, ciliati, alter altius affixus, 0.6 mm. longus, muticus, alter inferior, cum appendicula 1.0 mm. longus, loculo inferiori staminis alterius adhaerens. *Ovarium* oblongum, 1.3 mm. altum, glabrum, apice in stylum filiformem 4.2 mm. longum apice breviter bifurcatum parte inferiore leviter pubescens attenuatum, 4-ovulatum; discus cupuliformis, minutus. *Capsula* obovoidea, acuta, 4-4.5 mm. alta, extra pubescens. *Semina* 4, glabra, cinerea, suborbicularia, vix 1 mm. diametro, valde tuberculata.

NORTHERN RHODESIA. Solwezi District. Among grass and on bare ground in *Brachystegia* woodland at Solwezi, 11 June 1930, *Milne-Redhead* 489:—annual herb up to 5 dm. high; branches making a wide angle with the main shoot; flowers rose; capsules four-seeded.

An examination of authentic material of *Justicia phyllostachys* C. B. Cl. in the Kew Herbarium shows that the lower pair of anther cells frequently cohere, a character which it shares with *Justicia syncollotheca* Milne-Redhead, and which is not mentioned by Clarke in his description (Fl. Trop. Afr. 5, 188).

Monechma praecox *Milne-Redhead*, sp. nov. [Acanthaceae]; a *M. acuto* C. B. Cl. habitu herbaceo praecoci, bracteis minoribus differt.

Herba perennis; caules floriferi e caudice lignoso rigide erecti, circiter 15-20 cm. alti, sine foliis eu-foliaceis, glabri vel pilis albis plus minusve crispatis breviter pubescentes. *Inflorescentiae* 1-3-flores, ex axillis foliorum redactorum exortae, ut videtur spiciformes, terminales; folia redacta oblongo-acuta, vix 6 mm. longa, glabra vel similiter pubescentia, margine ciliata; bracteae similes sed saepe minores; pedicelli circiter 1 mm. longi. *Calyx* fere usque ad basin 5-partitus, glaber vel puberulus, circiter 4 mm. longus, lobis cuneatis acutis ciliatis. *Corolla* ochraceo-lactea, bilabiata, intus glabra fauce villosa, extra breviter pubescens; tubus late cylindricus, 5 mm. longus; labium posticum integrum, late ellipticum, circiter 5 mm. longum, vix 5 mm. latum, cucullatum; labium anticum 8 mm. latum, trilobatum, deflexum; lobus medius

suborbicularis, circiter 4 mm. latus; lobi laterales oblongi, apice rotundati, circiter 2 mm. lati. *Stamina* 2, fauci affixa; filamenta filiformia, circiter 4 mm. longa; antherae 2-loculares, loculis discretis, altero altius affixo mutico, altero inferiore cauda alba membranacea integra appendiculato. *Ovarium* oblongum, circiter 2 mm. altum, glabrum, 4-ovulatum, ovulis duobis inferioribus minoribus; stylus filiformis, 7.5 mm. longus, parce pubescens; discus cupuliformis, vix 1 mm. altus. *Capsula* non visa.

NORTHERN RHODESIA. Solwezi District. On burnt ground in dambo at Solwezi, 20 Sept. 1930, *Milne-Redhead* 1150:—perennial with woody rootstock; old shoots burnt off; young flowering shoots rigidly erect, up to 2 dm. high, leafless; flowers creamy white.

Although this plant seems to have affinity with certain species of *Monechma*, it is possible that when the fruit of it becomes known it may be necessary to transfer it to the genus *Justicia* L.

Phayloopsis hispida *Milne-Redhead*, sp. nov. [Acanthaceae]; a *P. Betonica* S. Moore foliis hispidis, tubo corollae calyce longiore, stylo stamina non excedente recedit.

Herba perennis, caulibus decumbentibus usque 1 m. longis parce ramosis obscure quadrangulis breviter pubescentibus vel puberulis internodiis usque 9 cm. longis. *Folia* lanceolata vel ovato-lanceolata, acuminata, apice rotundata, basin versus in petiolum 1–1.5 cm. longum angustata, 8.5 cm. longa, 2.5 cm. lata, supra valde hispida, subtus leviter hispida. *Inflorescentiae* breviter strobiliformes, terminales et ex axillis foliorum summorum exortae; bracteae cymas 1–3-floras subtendentes obovato-ellipticae, 8 mm. longae, usque 4.5 mm. latae; bracteae flores subtendentes minutae, lineares, vix 2 mm. longae; bracteae omnes cum calyce pubescentes pilis glandulosis et eglandulosis intermixtis. *Calyx* fere usque ad basin 5-partitus; segmentum posticum late oblongo-oblanceolatum, apice obtusum, 8 mm. longum, 2.5 mm. latum; segmenta duo antica liguliformia, medium versus leviter angustiora, apice obtusa, 7 mm. longa; duo lateralia subulata, 6.5 mm. longa. *Corolla* alba, 15 mm. longa, extra breviter pubescens; tubus cylindricus, apicem versus anguste infundibuliformis, 10–12 mm. longus, leviter curvatus; lobi obovati, obtusi, subaequales, 3–4 mm. longi, sed limbus ut videtur bilabiatus. *Stamina* 4, inclusa, antheris bilocularibus submuticis 1.5 mm. longis. *Stylus* filiformis, parce pilosus, 4 mm. longus, inclusus; ovarium 4-ovulatum, apice pubescens; discus cupularis. *Capsula* non visa.

NORTHERN RHODESIA. Solwezi District. In evergreen vegetation by stream just west of R. Meheba, 21 July 1930, *Milne-Redhead* 748:—perennial herb growing in shade of evergreen shrubs, with sprawling shoots up to 1 m. long; flowers white with yellow throat.

Ocimum suave *Willd.* Enum. Pl. Hort. Bot. Berol. 629 (1809) [Labiatae]; Bak. in Dyer Fl. Trop. Afr. 5, 338 (1900). *Geniosporum*

discolor Bak. in Dyer Fl. Trop. Afr. 5, 351 (1900), *synon. nov.* *Ocimum Johnstonii* Bak. in Dyer Fl. Trop. Afr. 5, 345 (1900), pro parte, quoad pl. ex Kapete [Kapete].

The type specimen of *G. discolor* Bak. (Scott Elliot no. 6597) is very young, and in this stage the dense inflorescence gives the plant the appearance of a species of *Geniosporum* Wall. ex Benth. On careful dissection, however, the specimen was found to belong to the genus *Ocimum* L. *G. discolor* has the characteristic decurrent upper calyx-tooth of this genus, and not the tubular subequally toothed calyx and conspicuous basal bracts of *Geniosporum*. It is synonymous with the wide-spread species, *Ocimum suave* Willd. One of the specimens quoted by Baker in the Flora of Tropical Africa under *Ocimum Johnstonii* Bak. (Thomson from Kapete) belongs here, the rest of the material quoted under that species is *O. kilimandscharicum* Guerke, published five years earlier in Engl. Pflanzenw. Ost-Afr. C, 349 (1895).

O. suave is very closely allied to *O. viride* Willd., *O. trichodon* Bak. ex Guerke and *O. gratissimum* L. The two former species are confined to Tropical Africa and the latter is common to India, the Mascarene Islands and Tropical America (according to some authors a varietal form occurs in Tropical Africa). *O. suave* extends through Arabia, Tropical and South Africa to the Mascarene Islands and Ceylon, and is also found in the West Indies.

The distinguishing characters of *O. kilimandscharicum* and *O. suave* are appended below :—

Inflorescence not, or rarely a little branched ; corolla up to 8 mm. long, at least twice as long as the calyx ; stamens long-exserted ; upper-lip of calyx orbicular, widely decurrent ; leaves shortly petiolate, ovate, comparatively small, lamina up to 4 cm. long and 2.5 cm. broad *kilimandscharicum*

Inflorescence much branched ; corolla small, up to 5 mm. long, only slightly longer than the calyx ; stamens shortly exserted ; upper lip of calyx ovate, narrowly decurrent ; leaves very variable, ovate to ovate-lanceolate, narrowly cuneate at the base, petiole up to 3 cm. long, lamina up to 11 cm. long and 5 cm. broad *suave*

E. A. BRUCE.

XLV—RESEARCHES ON *SILENE MARITIMA* AND *S. VULGARIS* : XIX.* E. M. MARSDEN-JONES and W. B. TURRILL.

ANALYSIS OF A WILD POPULATION OF *S. VULGARIS* FROM THE COASTAL CLIFFS OF SOMERSET.

The population of *Silene vulgaris*, one hundred plants of which are analyzed in this paper, was growing on the cliff at Blue Anchor, in the western part of South Somerset, vice-county 5. The cliff starts

* Continued from K.B. 1937, 318.

at the hotel to the east and was populated by *Silene* for about 300 yards. The cliff is 40 to 50 feet in height, and, where the *Silene* plants were growing, is composed of red Keuper marl. The total population of *S. vulgaris* on the cliff was small—probably there were not more than 200 plants of the species, of which about a half were used in preparing this paper. At the top of the cliff there was pasture-land, two fields in length. In the field adjoining the hotel, with fairly long grass, there were a few scattered *Silene* plants. In the second field, with shorter grass, a hundred plants were counted in as many square yards. On portions of the cliff-face there was little or no vegetation, owing to recurrent slipping which removes all or most of the existing vegetation. Plants which start a new colonization include: *Scabiosa arvensis* L., *Plantago lanceolata* L., *Cirsium arvense* (L.) Scop., *Ononis spinosa* L. var. *mitis* (L.), *Convolvulus arvensis* L., *Lotus corniculatus* L., and *Petasites oratus* L. The plants of *Silene* were, with one exception, growing in association with stabilized vegetation. Only one plant of *S. vulgaris* was seen growing in complete isolation, but in one inaccessible place there were several plants in association with a very scanty vegetation. The list of plants recorded on the cliff-face additional to those mentioned above is: *Bellis perennis* L., *Lathyrus pratensis* L., *Blackstonea perfoliata* Huds., *Rubia peregrina* L., *Trifolium procumbens* L., *Centaurea* sp., *Rumex obtusifolius* L., *Agrimonia eupatoria* L., *Leontodon autumnalis* L., *Lycium chinense* Mill., *Lavatera arborea* L., *Rosa* sp., *Rubus* sp., *Pulicaria dysenterica* Bernh., *Senecio Jacobaea* L., *S. erucifolius* L., *Potentilla erecta* (L.) Hampe, *Achillea Ptarmica* L., *Trifolium medium* (L.) Huds., *Sonchus asper* Hill, *Heracleum Sphondylium* L., *Brassica nigra* L., *Agrostis stolonifera* L., *Lolium perenne* L., *Bromus hordeaceus* L., *Arrhenatherum elatius* (L.) Mert. et Koch, *Dactylis glomerata* L., *Poa pratensis* L., *Agropyron repens* L., *Holcus lanatus* L., *Festuca arundinacea* Schreb., *F. rubra* L. subsp. *fallax* Hack., and *Scleropoa rigida* Griseb.

Part of the cliff was bounded by a hedge composed of *Rosa* sp., *Crataegus monogyna* Jacq., *Prunus spinosa* L., *P. insititia* L., *Rubus* sp., and *Pyrus Malus* L. (as a shrub). At the end of the hedge there was a clump of scrub trees of *Ulmus foliosa* Salisb.

No plants of *Silene maritima* L. were found on the cliff or in the neighbourhood and no indication that it had ever been there. All the facts, both from the field survey and the scoring, suggest that *S. vulgaris* has either attained the cliff-face by seeding down from above or, probably more rarely, slipped masses of plants have lodged in hollows on the cliff-face.

Samples of soil taken from around and between the *Silene* plants showed a pH of 7.5 to 8 when tested colorimetrically. All of five soil samples showed strong to violent bubbling on addition of HCl.

The plants were scored on 1 July 1936, in full flower. Fruit and seed samples were collected on 13 August 1936.

CHARACTER ANALYSIS OF THE POPULATION.

The values for all the qualitative characters, except those of the androecium, are in percentages.

Length of flowering stems :

Maximum	97 cm.
Minimum	31 cm.
Mean	59 cm.
Standard deviation	14.9

This result is not very different from that obtained from the analysis of an inland population of *S. vulgaris* from Wiltshire (K.B. No. 6, 1932, 271).

Habit : all the plants had ascending stems and no barren over-wintering shoots.

Anthocyanin in vegetative parts : the values scored were : very much 2, much 42, medium 36, little 19, none 1.

Stem indumentum : the ratio obtained was : dense 7 : medium 5 : few 1 : glabrous 87.

Leaf indumentum : the ratio obtained was : dense 6 : medium 5 : few 2 : glabrous 87.

There was exact correlation between glabrous stems and glabrous leaves, with 87 per cent. of the sample showing this correlation. There was not exact correlation between density of indumentum on stems and leaves, where indumentum occurred.

Surface of vegetative parts and calyx : all the plants were non-shining dull green (mat).

<i>Leaf length and breadth.</i>				<i>Length.</i>	<i>Breadth.</i>
Maximum	...	...	...	94 mm.	31 mm.
Minimum	...	...	...	16 mm.	6 mm.
Mean	...	...	...	55 mm.	15 mm.
Standard Deviation	...	...	...	12.8	2.7
Correlation of length to breadth				0.43	

The variation in length was greater than that found for the Wiltshire inland population but the variation in breadth was less. The correlation of length to breadth showed little difference—0.46 for the inland population, 0.43 for the coastal population (K.B. 1932, 272).

Number of flowers per inflorescence :

Maximum	...	...	66
Minimum	...	...	4
Mean	...	...	20
Standard Deviation...			9.4

The maximum is slightly higher, the minimum and mean are lower and the standard deviation 9.4 instead of 10, as compared with the Wiltshire inland population (K.B. 1932, 274). The lower minimum and mean are probably due to somewhat greater exposure of the sea-coast population.

Anthocyanin in calyx: the values scored were: very much 6, much 59, medium 59, little 35, none 0. Anthocyanin in both vegetative parts and in calyces is more pronounced in this coastal population than in most inland populations of the species. There is a very low correlation between the development of anthocyanin in the vegetative parts and in the calyx.

Calyx shape: the ratio obtained was: inflated 19: subinflated 80: narrow 1.

Petal colour: all the plants had white flowers.

Petal lobing: all the plants had bilobed petals, except 4 which showed some multilobing.

Depth of lobing: all the plants had petals lobed $\frac{3}{4}$.

Corona: all the plants had bosses on the petals, except 8 which had small scales.

Anthocyanin blotch on petals: all the plants had no anthocyanin blotch, except 6 in which it was present.

Overlapping of petals: the petals were contiguous in 3 plants; in all the others they were neither contiguous nor overlapping.

Overlapping of segments: the segments were contiguous in 17 plants; in all the others they were neither contiguous nor overlapping.

Sex: at the time of scoring the plants were hermaphrodite 37, female 59, hermaphrodite and female 4. The high percentage of purely female plants was remarkable.

Anthocyanin in anthers: in 41 plants (all that produced stamens) anthocyanin was present.

Anthocyanin in filaments: in 36 plants present, in 5 plants absent.

Stigmata colour: in 66 plants purple, in 34 plants white.

Immature seed colour: this was white for all plants except 18, in which it was purple.

A separate collection of fruits and seeds was made from the same population on 13 August 1936. The results of scoring this sample gave:

Fruit shape: I. 29: I.-II. 87: II. 4.

Mature seeds: tubercled 75: weak armadillo 13: armadillo 12.

For a pure *S. vulgaris* population these are rather high numbers of armadillo and weak armadillo seeds.

DISCUSSION AND SUMMARY.

The wild population of *S. vulgaris*, a sample of which is analyzed in this paper, was growing in an unusual habitat and one more normal for *S. maritima* than for the generally inland species *S. vulgaris*. No *S. maritima* occurred in the area and the detailed scorings have shown the population to be pure *S. vulgaris*. The peculiar habitat conditions, and especially proximity to the sea, are possibly the causes of the high development of anthocyanin in the vegetative parts and calyces of many of the individuals. Other distinctive features of the population were the high percentage of female plants and the rather high proportion of weak armadillo and armadillo seeds. The occurrence of 4 plants with multilobed

petals is also interesting. The occurrence of plants with small coronal scales to the petals is not unusual in populations of *S. vulgaris* and is not considered, by itself, an indication of crossing with *S. maritima*. A Wiltshire downland population had 14% of the plants with small scales as compared with 8% of the Somerset coastal plants. (K.B. 1932, 274.)

S. maritima grows most typically on coastal shingle. It also occurs on river shingle (as in W. Wales) and on hill and mountain scree (Yorkshire, Wales, Scotland). *S. vulgaris* has a somewhat wider range of habitats but occurs most commonly in chalk or limestone grassland, arable fields, on hedge banks, roadsides, and at wood-edges, in the British Isles. Both species occasionally occur on coastal cliffs (see K.B. 1929, 36, and K.B. 1929, 173) either alone or, more rarely, together. Plants of intermediate character may occur under the latter conditions and show complicated segregations (K.B. 1935, 209 seq.). The importance of the present communication is that it shows that in the absence of *S. maritima* a population of *S. vulgaris* growing on a sea-cliff can remain as true to the recognized specific characters as an inland population of the same species.

The research on which this paper is based has been aided by a Royal Society Government Grant.

XLVI—CONTRIBUTIONS TO THE FLORA OF BURMA : XIII.*

The regions shown in brackets after the name of the species are those from which it has been previously recorded.

Artabotrys multiflorus C. E. C. Fischer, sp. nov. [Annonaceae] ; ab *A. odoratissimo* R. Br. foliis ellipticis latioribus, floribus numerosis, indumento rufo persistente recedit.

A climber ; branchlets dark brown, rugulose, minutely lenticellate ; ultimate twigs minutely puberulous, transversely ridged. *Leaves* elliptic to elliptic-oblong, abruptly bluntly apiculate or bluntly acuminate, base narrowed, 10–16.5 cm. long, 4–6.5 cm. wide, midrib prominent below, primary nerves 9–12 pairs, slightly raised below, arching and anastomosing near the revolute margins, ultimate reticulations fine, appressed pubescent when young, especially on the midrib beneath, becoming glabrous ; petioles 5–8 mm. long, channelled above. *Peduncle* stout, sharply curved, 1.5–2 cm. long, appressed bristly, bearing two fascicles of numerous flowers, one apical, the other a little removed from it on the outer side ; bracts very small, ovate, pubescent ; pedicels 8–15 mm. long, rufous hispid. *Sepals* triangular-ovate, acute, equal or sub-equal, 3–4 mm. long, rufous pubescent without, glabrous within. *Petals* 6, subequal, oblong to oblong-lanceolate, obtuse, 18–25 mm. long, 6–6.5 mm. wide, deeply concave at the base, the inner slightly narrower and

* Continued from K.B. 1935, 576.

more deeply concave at the base than the outer and conniving over the stamens and ovaries, thinly pubescent on both faces above the concave base, densely grey pubescent on the concave part outside, glabrous within, furnished with a thick chevron-like, grey-pubescent ridge on the inside above the concavity. *Receptacle* convex, rufous or fulvous bristly. *Stamens* ∞ , oblong-cuneate, 1.5 mm. long, vertically keeled on the middle of the back, connective truncate, concealing the linear anthers from above. *Ovaries* 12–21, narrowly oblong or lanceolate-oblong, compressed, 1.3–1.5 mm. long, smooth, glabrous; style about as long, oblong or narrowly clavate. *Fruit* not seen.

Amherst District: Dawnas Range, Mekhrein Chaungbya, 3000 ft., flowers Feb., green to yellow, fragrant, *C. E. Parkinson* 5220 (type in Herb. Kew., duplicates in Herb. Bot. Gard. Edinb. and For. Herb. Maymyo).

***Reevesia siamensis* Craib.** [Sterculiaceae].

(Siam)

Amherst District: Dawnas Range, Misty Hollow, 2400 ft., fls. white and frt. Feb., *C. E. Parkinson* 5285; 'small tree 15–20 ft. high; Myitkyna District, Pum-kah Tawng, 2600 ft., fls. and frt. April, *Maung Mya* per *C. E. Parkinson* 5405; "stem brownish-grey; capsule greyish-brown." In this latter specimen the leaves are usually cordate at the base and are much more pubescent than the typical ones; it might well be treated as a variety.

***Sloanea Parkinsonii* C. E. C. Fischer,** sp. nov. [Elaeocarpaceae].

S. hongkongensi Hemsl. similis sed foliis ellipticis majoribus, pedunculis puberulis longioribus, petalis latioribus utrinque puberulis, staminibus petalis brevioribus, capsulis majoribus differt.

A slender tree 17 m. or more high; bark greyish-brown; branchlets grey, dotted with pale-brown, elongate or rounded lenticels; youngest twigs dark, longitudinally furrowed, glabrous. *Leaves* elliptic or elliptic-lanceolate, shortly, abruptly cuspidate, base rounded or cuneate, 9–16 cm. long, 4.5–7 cm. wide, glabrous, brown when dry, primary nerves 6–7 pairs, not much arched, anastomosing near the subundulate margins, ultimate reticulations very fine, subquadrate; petioles 1.3–3 cm. long. *Peduncles* from the year's shoots below the leaves or one or two axillary, solitary, 1-flowered, 3.5–7 cm. long, puberulous; bract at the base very small, deciduous. *Flowers* 1–1.5 cm. across, pale-greenish. *Sepals* ovate, obtuse, 9.5 mm. long, grey-felted on both sides. *Petals* oblate-quadrate, grey-puberulous on both sides, 7.5–8.2 mm. long, 9.2–10.2 mm. wide, apical margin cut into a number of unequal, acute lobes 1.5–3 mm. deep. *Stamens* very many; filaments 1 mm. long, compressed, densely grey-pubescent; anthers narrowly ensiform, 3.5–4.5 mm. long, grey-pubescent, connective produced into an acumen up to 2 mm. long. *Ovary* ellipsoid, 4.5 mm. long, tomentose; style subulate, 7 mm. long, glabrescent upwards.

Capsule 4-valved (in the two seen; 3-5-valved fide Parkinson), about 6 cm. across when open, woody, walls up to 9 mm. thick, purplish-pink within and on the sides of the valves, outside felted-pubescent, fuscous at the base becoming orange-brown at the apex, beset with rather blunt prickles up to 1 cm. long. Seeds not seen.

Amherst District : Dawnas Hills, Makhrein Chaungbya, 3000 ft., fls. and frt. Feb., *C. E. Parkinson* 5217 (type in Kew Herb., duplicates in Bot. Gard. Edin. and Mamyo Forest Herb.)

Syzygium rhamphiphyllum (*Craib*) *C. E. C. Fischer*, comb. nov. [Myrtaceae]; *Eugenia rhamphiphylla* Craib.

(Siam).

Akyab, *Dehra Dun Herb*, 18629; Tenasserim, Victoria Point, 500 ft., fls. white, Jan., *Su Koe* per *For. Bot. Burma* 6290, "large tree; stem brownish-red; flowers fragrant." This plant was distributed from Dehra Dun as *E. Barringtonii* R. S. Hole ined.

Viburnum punctatum *Ham.* [Caprifoliaceae].

(Nepal, Kumaon, Assam).

Upper Chindwin District : at foot of Leydhei Chin Hill, in loamy evergreen forest, 900 ft., fls. white, April, *Maung Po Chin* per *C. E. Parkinson* 5827; "tree 40 ft. high; wood fairly hard, pale-white, without heartwood."

Sarcosperma arboreum *Benth.* [Sapotaceae].

(Sikkim, Assam).

C. E. Parkinson 4969, without locality.

Styrax Ridleyana *Perk.* [Styracaceae].

(Malay Peninsula and Archipelago).

Myitkyna District : Nawra-Pidaung Reserve, 525 ft., fls. March, *Maung Mya* per *Forest Bot. Burma* 5347, "tree; stem whitish-brown; crown small; flowers white."

Symplocos Pochinii *C. E. C. Fischer*, sp. nov. [Symplocaceae]; *S. monticolae* King et Gamble peraffinis, sed nervis foliorum 9-10, costa subtus rubescente, racemis longioribus haud fasciculatis, floribus numerosioribus, pedicellis articulatis distincta.

A tree 30 m. high 1.6 m. girth; twigs grey-brown, at first with the acuminate buds fulvous pilose, later glabrous. *Leaves* elliptic-oblong, bluntly acuminate, base cuneate or rounded, 11-16 cm. long, 4-5.5 cm. wide, dark-green (when dry) and glabrous above, paler and puberulous on the nerves beneath, margins sinuous-serrate, midrib and 9-10 pairs of lateral nerves slightly impressed above, raised below and reddish or yellowish, the primary nerves arching and anastomosing within the margins, secondary nerves transverse between them; petioles 8-10 mm. long, channelled above. *Racemes* axillary, simple or branched near the base, slender 5-11 cm. long, glabrous, many-flowered; bracts ovate, 2 mm. long, deciduous; pedicels 2-2.2 mm. long; flowers jointed on the pedicels; bracteoles

2, opposite, broadly ovate, 1 mm. long. *Ovary* funnel-shaped, 1.8 mm. long, 3 celled; ovules 1 in the axil of each cell; style rather stout, 2-3 mm. long; stigma large, capitate. *Sepals* 5, very shortly united, semi-circular, 0.8-1 mm. diam. *Corolla* 3.7 mm. long, tube very short; lobes 5, imbricate, broadly oblong. *Stamens* about 70, shortly united into 5 bundles opposite the corolla-lobes; filaments 1-3 mm. long, the outermost longest; anthers of 2 subglobose, divaricate cells 0.4 mm. diam. *Fruit* (immature) globose, 5 mm. diam.

Toungoo District: Pathi drainage, 75 ft., fls., Dec., *Maung Po Chin* per C. E. Parkinson 4394. "In rocky soil in evergreen forest; bark $\frac{1}{4}$ in. thick; wood soft, white, without heartwood; flowers white, mildly scented." (Type in Herb. R. Bot. Gard. Edinb., duplicates in Kew Herb. & Forest Herb. Maymyo).

Exacum tetragonum Roxb. [Gentianaceae].

(Nepal W. Assam; China).

Mandalay District: Sakaugyi Reserve, N. of Taunggun, 2250 ft., fls. Dec., *Maung Mya* per *Forest Bot. Burma* 3670, "1 ft. high; corolla blue"; Pegu District, Salu forest, fls. Dec., J. H. Lace 2848; Maymyo District: near Painwagon, in open swampy place, 3500 ft., fls. March, *Maung Sin* 13547, "fls. deep yellow with orange tips." Don has referred to a golden-yellow variety.

Strobilanthes Hossei C. B. Clarke. [Acanthaceae].

(Siam).

Katha District: Kadu Hill, 3000-4000 ft., fls. Feb., J. H. Lace 5114.

Machilus shweliensis W. W. Smith var. **Myai** C. E. C. Fischer, var. nov. [Lauraceae]; a typo ramulis foliisque pallidioribus. rhachibus paniculisque glauco-purpureis, floribus majoribus distincta,

A small or large tree; stem grey; twigs pale-brown, finely longitudinally furrowed when dry, glabrous. *Leaves* 11.5-20 cm. long, 2.5-4.5 cm. wide, primary nerves 17-20, uniting close to the narrowly cartilaginous, slightly recurved margins, secondary nerves straight, bent or curved transversely between the primaries, ultimate reticulations very fine, giving a pitted appearance on both faces; petioles 1.2-2.2 cm. long, finely longitudinally furrowed as are also the midribs, channelled above. *Panicles* fascicled at the ends of the branchlets, embraced by shaggy, oblong or obovate bracts up to 1.5 cm. long, which are rufous-tomentose without, glabrous within, rufous ciliate, the younger with a silvery sheen; rhachis 5-10 cm. long, glabrous, glaucous-purple; bracteoles lanceolate to ovate, acuminate, margins sometimes with 1-2 large teeth, 4-6.2 mm. long, rufous villous, early deciduous; pedicels 5-7 mm. long, jointed on the branches of the panicle, often bluntly quadrangular when dry. *Perianth segments* 5.5-7.2 mm. long, the inner 3 larger, grey silky pubescent outside, puberulous within. Perfect

stamens 9, the 2 outer rows eglandular, rarely all glandular like the 3rd row; filaments 3–5 mm. long, more or less hairy; anthers oblong, 1.2–1.8 mm. long; 3rd row similar but the filament slightly longer and with a gland attached to the base on either side with stipe 1–1.7 mm. long and a cordate head 1–1.4 mm. long; 4th row reduced to spatulate, more or less hairy staminodes 2.3–3 mm. long with acute trapezoidal apex. *Ovary* 2 mm. long; style subulate, 2.4–4 mm. long. *Fruit* not seen.

Bhamo District: Kaunglauh, Lapyikha, 6500 ft., fls. yellow, March, *Maung Mya* per C. E. Parkinson 4990 (type in Herb. Reg. Bot. Gard. Edinb., duplicates in Kew Herb. and in Forest Herb. Maymyo). Vernacular name: *Saman Pun Ko*.

XLVII—ON THE IDENTIFICATION OF RHUS FILICINA SESSÉ ET MOC. EX DC. A. A. BULLOCK.

The publication of the new Anacardiaceous genus *Actinocheita* Barkley in Ann. Missouri Bot. Gard. **24**, 1–5, tt. 1–3 (1937), requires comment on account of the controversial nature of the synonymy, and the minor problem in nomenclature involved by the rejection of part of it.

The genus *Actinocheita* is actually based on specimens of *Rhus potentillifolia* Turcz., with which Mr. Barkley has identified, I think erroneously, *Rhus filicina* Sessé et Moc. ex DC. (DC. Prodr. **2**, 67: 1825), which is considered by other authors to be identical with *Bursera bipinnata* (Sessé et Moc. ex DC.) Engl.

Rhus filicina DC. is based mainly upon one of Sessé and Mocino's drawings, a reproduction of which is given by Mr. Barkley (*l.c.* t. 1). The drawing is accordingly the type of the name *Rh. filicina*, and De Candolle's description should be interpreted with this in mind. The drawing shows a branch bearing leaves and two inflorescences, and four extremely rough and inadequate sketches of parts of the flower. The *fruit* is not represented in the drawing, but is described by De Candolle, evidently from Sessé and Mocino's manuscript description of a plant known in Mexico under the vernacular name "Tetlazian." De Candolle had access to Sessé and Mocino's manuscript*, as well as to their drawings, and unfortunately concluded that the drawing of *Rhus filicina*, and that of *Rh. Tetlaziam*, the vernacular name of which was Tetlazian†, represented the same species. It appears that De Candolle drew up the description from plate 189 of Sessé and Mocino, and added the description of the fruit and the vernacular name, from the figure (217) and manuscript of *Rhus Tetlaziam*.

Rhus Tetlaziam Sessé et Moc. is admittedly conspecific with *Rh. potentillifolia* Turcz., which is the type of Mr. Barkley's new generic name *Actinocheita*. Mr. Barkley's identification of *Rhus*

* See Sprague in Kew Bull. 1926, 417–425.

† This at the same time explains the non-inclusion of *Rhus Tetlaziam* in the Prodromus.

filicina DC. with *Rh. potentillifolia* depends chiefly on De Candolle's statement that the fruit of the former bears violet hairs, since in a footnote to his paper (Ann. Missouri Bot. Gard. **24**, 3, adnot. 2 : 1937), he admits that there is room for doubt in his interpretation of plate 189 of A. de Candolle's *Calques*, but states that the original description of *Rhus filicina* DC. as "Fructus pilis violaceis hirtus" leaves little doubt as to the species intended. As indicated above, the description of the fruit was presumably taken by De Candolle from Sessé and Mocino's drawing of a plant in a different family! Had Mr. Barkley consulted Dr. Sprague's scholarly account of Sessé and Mocino's *Plantae Novae Hispaniae* and *Flora Mexicana* previously mentioned (supra, adnot.*, p. 440), the footnote on the second page of his paper would have been unnecessary, and he might have been able to explain the discrepancy between the fruit of *Bursera bipinnata* (Sessé et Moc. ex DC.) Engl. and that attributed to *Rhus filicina* Sessé et Moc. by De Candolle. The complete synonymy of *Bursera bipinnata* was given in Kew Bull. 1936, 355.

Recognising *Actinocheita* Barkley as a genus distinct from *Rhus*. L., the single species now requires another name:—

Actinocheita potentillifolia (Turcz.) Bullock, comb. nov.

Rhus potentillaefolia Turcz. in Bull. Soc. Nat. Mosc. **31**, 469 (1858).

Rhus filicina DC. in DC. Prodr. **2**, 67 (1825), quoad fructum et nom. vernac. "Tetlazian" tantum.

Rhus Tetlaziam Sessé et Moc. Fl. Mex. Ic. 217 (ined.) ex Pl. Nov. Hispan. ed. 1, 47 (1888); ed. 2, 44 (1893).

Toxicodendron potentillifolium (Turcz.) O. Kuntze, Rev. Gen. **1**, 154 (1891).

Actinocheita filicina Barkley in Ann. Missouri Bot. Gard. **24**, 2, tt. 2-3 (1937), et l.c. 310-311, t. 17, fig. 2, quoad descr. et spec. cit., sed excl. syn. *Rhus filicina* et *Bursera bipinnata*.

Mr. Barkley has cited a large number of specimens from the States of Mexico, Guerrero, Oaxaca and Puebla. To these may be added the following historic specimens, which are preserved in the Kew herbarium.

OAXACA. Near Oaxaca, June, *Andrieux* 466, "Arbuste de 12-14 pieds. Fl. rose, tirant sur le roux." Cordillera, Aug. 1840, *Galeotti* 4006A (type number), "Rochers cactiferi Tehuacan. Fl. roseis."

Without exact locality: "Mexico," *Jurgensen* 283.

These specimens are undoubtedly conspecific with *Pringle* 4752, which is also represented at Kew, and is cited by Mr. Barkley as "typifying" the species. Mr. Barkley apparently did not see any of the material distributed by *Galeotti* under his number 4006A, which is the actual type-collection.

XLVIII—MISCELLANEOUS NOTES.

The Curatorship.—The Minister of Agriculture and Fisheries has appointed Mr. W. M. Campbell, Superintendent of the Parks Department, Southend-on-Sea, as Curator in succession to Mr. J. Coutts, whose retirement was recorded in K.B. 1937, 396.

MR. G. W. ROBINSON.—Mr. G. W. Robinson, Assistant Curator in charge of the Herbaceous Department since 1931, has been appointed Curator of the Physic Garden, Chelsea, in succession to the late Mr. W. Hales, whose death was recorded in K.B. 1937, 320.

Dr. H. G. SCHWEICKERDT.—Dr. H. G. Schweickerdt, who has held the post of Botanist for South Africa at Kew since 1934, has been promoted from the rank of Assistant Professional Officer (Agrostology), Division of Plant Industry, Department of Agriculture, Pretoria, to that of Professional Officer (Botany).

Dr. N. L. BOR.—Dr. N. L. Bor has been appointed Forest Botanist at the Forest Research Institute, Dehra Dun, United Provinces. Dr. Bor was previously Botanical Forest Officer, Shillong, Assam, and recently spent several months study-leave working in the Kew Herbarium.

ANNIE LORRAIN SMITH.—By the death of Miss Annie Lorrain Smith, which took place on September 7th, cryptogamic botany in this country has lost one of its most outstanding characters.

Annie Lorrain Smith was born in 1854, one of a family which became well known in scholastic circles. After a period of general education which included visits to Germany and France, she took up the study of botany under Dr. D. H. Scott, at South Kensington, and later became assistant to Dr. W. Carruthers, who was Keeper of the Department of Botany at the British Museum (Natural History) and also Botanist to the Royal Agricultural Society. She was thus associated with work on seed-testing and became interested in the microfungi associated with germinating seeds. For many years she was responsible for naming most of the fungi which came to the Natural History Museum, but worked especially with microfungi, notably *Hyphomycetes*. Later she turned her attention to lichens, in connexion with the arrangement of the students series of lichens at the Museum, and prepared the second volume of the "Monograph of British Lichens" which had been begun by the Rev. J. M. Crombie. This appeared in 1911, and in 1926 she completed a second edition of the volume. Meanwhile, in 1918, she had also rewritten Crombie's first volume. In 1921 appeared two works which have been most useful to students, namely a "Handbook of British Lichens" which is a condensation

of the larger monograph in the form of a key, and the text book on lichens in the series of Cambridge Botanical Handbooks.

Miss Lorrain Smith was an active member of the British Mycological Society from its beginning, and until a few years ago was a regular attendant at meetings and forays. She was twice President of the Society, in 1907 and 1917. About 3 years ago she was awarded the O.B.E. in recognition of her services to Cryptogamic Botany.

She was a woman of vigorous personality and wide interests. Apart from botany the writer knew her best as a keen supporter of women's demands for full citizenship and equality of opportunity with men. With it all she retained a vivid sense of humour, and was always a stimulating companion. She will be greatly missed by her many friends.

E. M. WAKEFIELD.

ARNOLD SHARPLES.—It is with great regret that we have to record the death of Mr. A. Sharples, A.R.C.S., D.I.C., formerly Government Mycologist in the Department of Agriculture for the Straits Settlements and Federated Malay States.

Arnold Sharples was a native of Burnley, Lancashire, and received his early education at the Burnley Technical School. In 1908 he proceeded to the Royal College of Science, South Kensington, having gained an 1851 scholarship in geology, together with two King's Prizes in geology and mineralogy. There he turned his attention to botany, obtaining a first class in his final examination in 1912 and a diploma in plant physiology. After leaving the Royal College of Science he worked at Kew for about two months in the autumn of 1912, studying fungi under the late Mr. G. Massee, preparatory to taking up an appointment as Assistant Mycologist in the Department of Agriculture, Federated Malay States. He arrived at Kuala Lumpur in January 1913, after a short visit to Germany, and almost immediately became involved in work on diseases of the rubber tree (*Hevea brasiliensis*) and other troubles of the rubber industry. His first paper, on the "Spotting of Prepared Plantation Rubber," appeared as Bulletin 19 of the Department of Agriculture, F.M.S., in February 1914. Early in 1914 he was joined by Mr. F. T. Brooks, who had been appointed as Mycologist for a year, and together they investigated pink disease, due to *Corticium salmonicolor*, publishing a full illustrated account of this disease as Bulletin 21 of the Department of Agriculture. In 1916 Mr. Sharples was promoted to the post of Mycologist, which had been vacant after the return of Mr. Brooks. In 1930 he was seconded for three years to the Rubber Research Institute of Malaya as Head of the Pathological Division, and for a time acted as Director of the Institute. He retired from Government service in 1933 and from the Rubber Research Institute early in 1934.

Sharples' work was concerned mainly with the major diseases of *Hevea*, and either alone or in collaboration with other workers he published many important papers on root diseases, on diseases of the tapping panel such as mouldy rot, brown bast and black stripe, and also observations made on damage caused by lightning and by sun-scorch. Apart from rubber, Sharples was very interested in the diseases of the coconut and other palms. The experience gained in his twenty odd years connexion with the rubber industry of Malaya was incorporated in the book "Diseases and Pests of the Rubber Tree," which was written up after his retirement and published by Macmillan and Co. in 1936. The book, which is intended especially for planters, reveals the author's essentially practical outlook and his grasp of the problems of the grower. By the untimely death of Mr. Sharples so soon after his retirement not only his many friends but the rubber-planting community generally has sustained a very great loss. E. M. WAKEFIELD.

Botanical Magazine.—Part 3 of vol. 160 was published on September 28th and contains the following plant portraits: *Leptochiton quitoensis* Sealy (t. 9491), a new genus of *Amaryllidaceae* from Ecuador allied to *Pancratium* and *Pamianthe*, originally referred by Herbert to *Hymenocallis*; *Rhododendron kongboense* Kingdon Ward ex Rothschild (t. 9492), a native of cliffs at 4000–4350m. in S.E. Tibet; *Melaleuca linariifolia* Smith (t. 9493), from New South Wales and S. Queensland; *Primula Sherriffae* W. W. Smith (t. 9494), a species with a remarkably long corolla tube, from S.E. Bhutan; *Narcissus asturiensis* (Jord.) Pugsley (t. 9495), the smallest of the wild daffodils from the mountains of Spain; *Amelanchier florida* Lindley forma *tomentosa* Sealy (t. 9496), known in cultivation under the name *A. alnifolia* a native of N.W. America; *Rhododendron desquamatum* Balf. et Forrest (t. 9497), from S.E. Tibet, W. Yunnan and Burma; *Phlox bifida* Beck var. *glandifera* Wherry (t. 9498), the sand phlox with flowers singularly like those of a *Lychnis* or a *Silene*, a native of the United States, especially Indiana and Illinois; *Mutisia oligodon* Poepp. et Endl. (t. 9499), introduced to cultivation from the Andes of Chile and the Argentine by Mr. H. Comber; *Fritillaria gracilis* (Ebel) Aschers. et Graebn. (t. 9500), from Montenegro, Hercegovina and Dalmatia, and *Distylium racemosum* Sieb. et Zucc. (9501), the most widely-spread species of the genus, being known from Japan, Formosa and Hong Kong.

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